

THE SUN'S DIRECTION AND POSITION WITH REGARD TO SEASON: AND  
ALTITUDE TO DATE AND TIME, TOGETHER WITH SHADOWS THUS  
AFFECTING LIGHT AND AIR.

By FRED. WM. QUICK.

**T**HERE are two factors to be taken into consideration in Light and Air cases, namely, *direction* and *altitude* of the sun at any time of the day or year. These are more important even than the height of the obstructing building.

The accompanying diagrams show *in plan* the direction of the sun's rays to time at widely different periods of the year. They record the direction and the length of the shadow cast by a 5-centimetre needle set vertically on a drawing-board, fixed for each day with precisely the same compass bearing.

Usually, for the first hour after sunrise and the last hour before sunset, the apparent altitude of the sun is but 10 degrees. The increase thereafter till noon is but small about mid-winter, and equals  $(90^\circ - \text{latitude of place})$  minus the sun's apparent declination south of the equator  $- 23\frac{1}{2}^\circ$  at Christmas; to date at other times, as per *Whitaker's Almanack*.

Taking London as  $52^\circ$  N. latitude, noon altitude  $= (90 - 52) - 23\frac{1}{2} = 14\frac{1}{2}^\circ$ , whence noon shadows *then* are nearly four times the height. All others will be much longer in early morning and as the afternoon advances. Their direction is indicated by the quarter-hour rays drawn from the centre of figure and marked on the hour-angle circle. Successively marking the apex of the shadow affords the parabolic curve crossing the time circle. The figure is that which is swept out proportionally by any other object. It will also be seen that the sun then rises about S.E. and sets about S.W.—the horizontal arc for the day being little more than  $90^\circ$  in this latitude.

At that period the sun does not rise at all on  $67\frac{1}{2}^\circ$  N. latitude. Hence, the further north of London one may then travel the shorter will the daylight be. On the contrary, the further south one may then go the longer daylight one enjoys; in Naples, for instance, an hour earlier in morning, and an hour later in afternoon, than in London. And, since Naples is  $10^\circ$  S. of London, the noon altitude will be  $10^\circ$  greater all the year round.

As the year advances towards the vernal equinox the days lengthen, noon altitude

increases, and about 21st March =  $(90^\circ - \text{latitude})$  for any place on earth. Then the "curve" crossing the time circle approaches nearly to a straight line, all intermediate dates progressively flattening the Christmas parabola, so that the equivalent of Christmas noon is attained about 8.30 A.M. and 3.30 P.M. With the advent of April the noon altitude rapidly increases, during the first week affording a noon shadow = the height of the building casting such shadow. A rapid rise succeeds, so that by 24th May noon altitude =  $60^\circ$ , and shadows =  $\cdot 577$  height, little more than half, the curve approximating midsummer. Thereafter but little difference occurs, except in time, to which reference follows later.

On 22nd June, the noon shadow in London is practically half the height;  $60^\circ$  occurs about 10.45 A.M. and 1.15 P.M.;  $45^\circ$  about 9 A.M. and 3 P.M. 21st July to some extent resembles 24th May—but time differences are considerable, as the table shows; the sun appearing to be before the clock in May, and after the clock in July; the difference in "sun-noon" being about ten minutes, the noon altitude  $60^\circ$  occurring then for the last time in the year.

Throughout August the sun declines in altitude, but *gains* time, these two causes combining to accelerate the disappearance of the major altitudes until, with the entry of September, the last  $45^\circ$  occurs at noon.

The horizontal arc, but  $90^\circ$  at Christmas, expands to  $180^\circ$  towards the end of March, and further to about  $270^\circ$  at midsummer; contracting once more to  $180^\circ$  near the autumnal equinox, and shrinking further throughout October and November till Christmas.

*Time Differences.*—The sun and clock *agree* only on 15th April, 15th June, 2nd September, and 26th December. The question as to how long such may be the case belongs to Astronomy. *Whitaker's Almanack* supplies useful matter, thus:

The sun is *after* the clock

11th February nearly  $\frac{1}{4}$  hour.

27 July nearly  $6\frac{1}{2}$  minutes.

The sun is *before* the clock

15th May nearly 4 minutes.

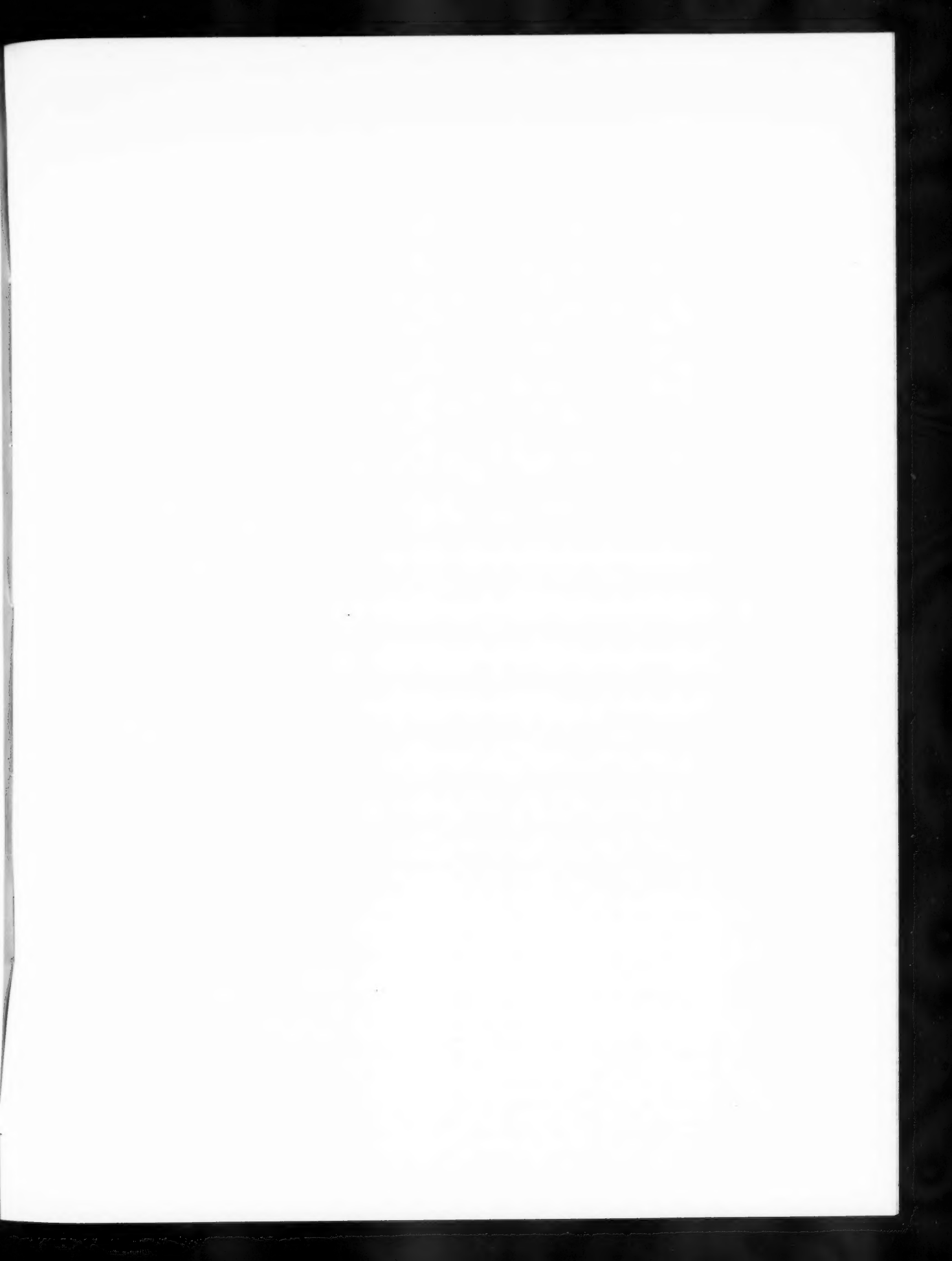
3rd November nearly  $16\frac{1}{2}$  minutes.

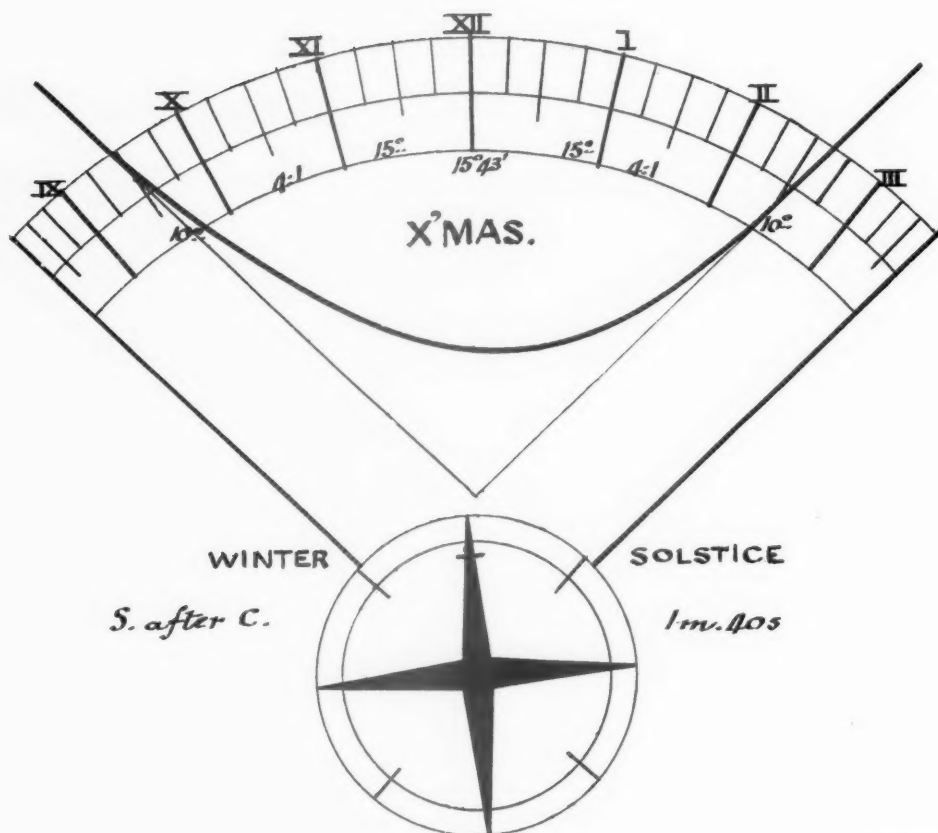
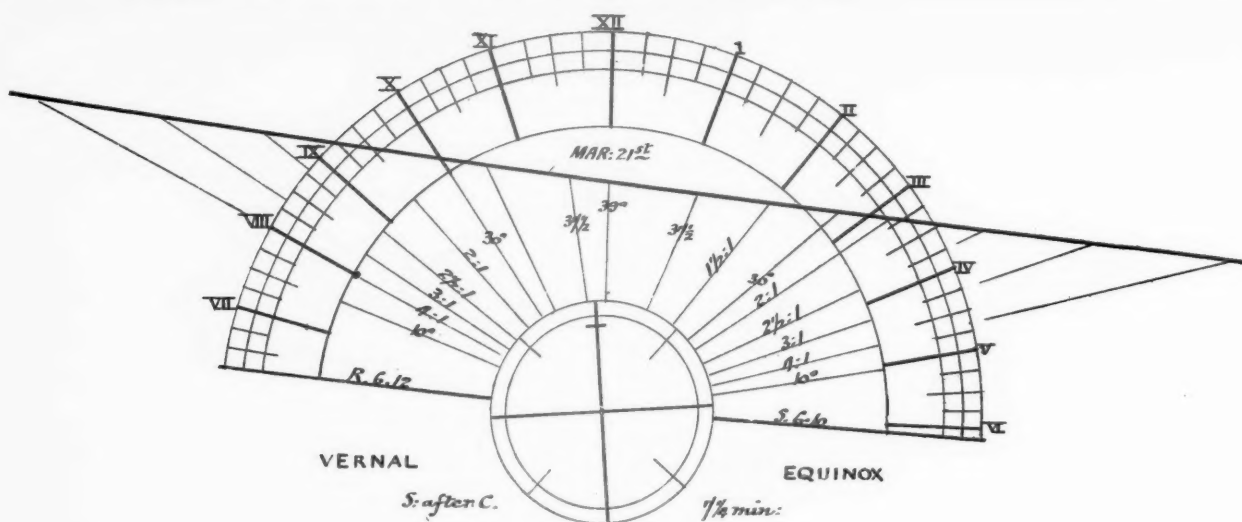
Briefly, one has to consider a globe rotating on its axis, travelling along a path slightly elliptical; such path being laid on a plane tilted  $23\frac{1}{2}^\circ$ ; and, apparently, in addition thereto, certain perturbations of movement and *orbit*, which belong to the domain of Astronomy.

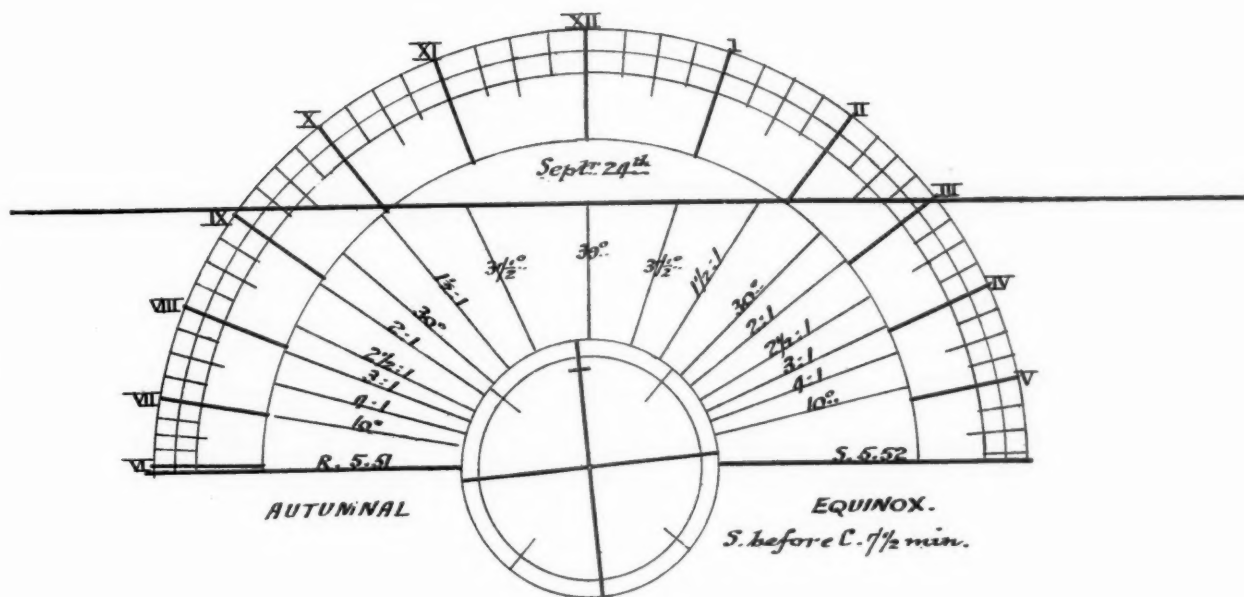
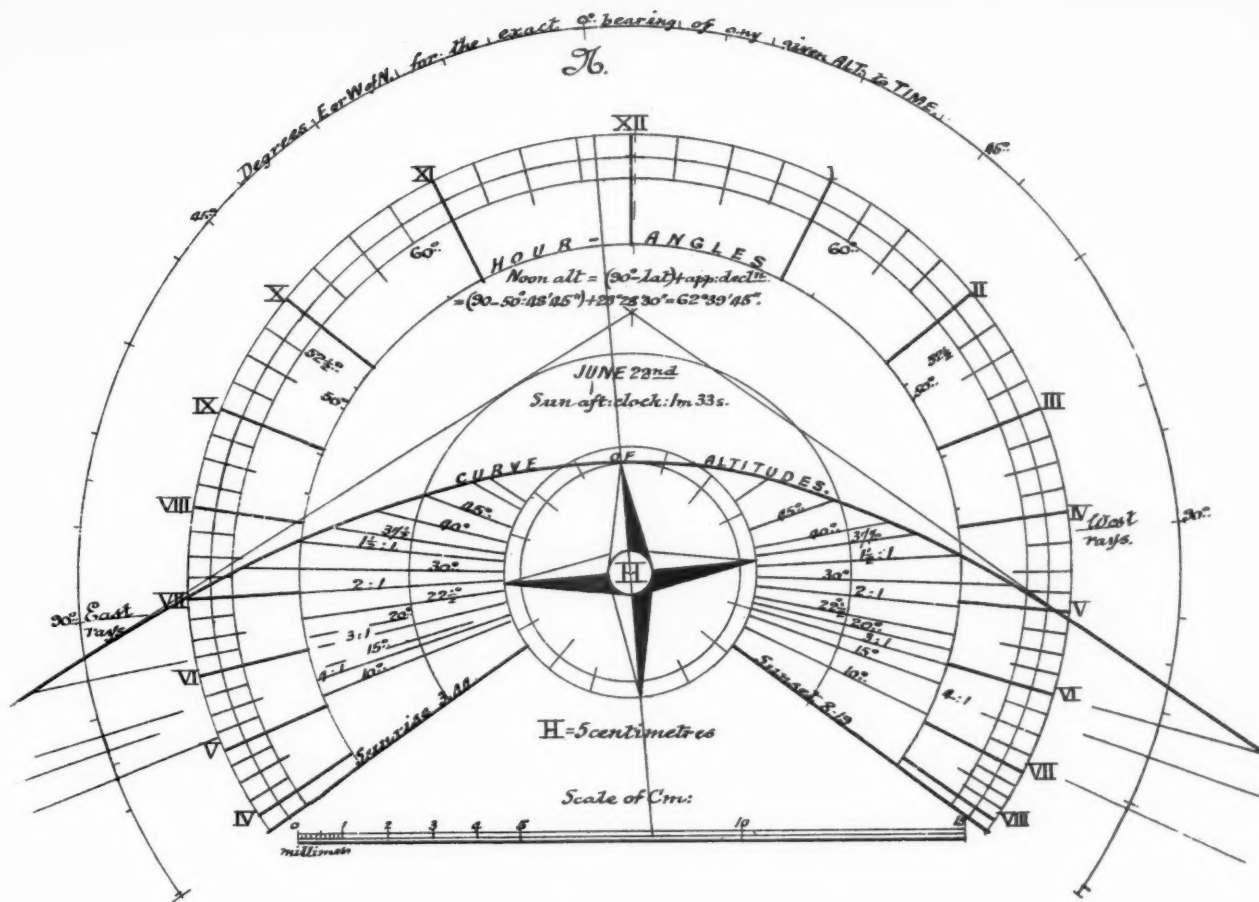
The action of all these effects combined is slow—slower than the Court of Chancery; affording time enough for both the obstruction and the obstructed to disappear in the course of nature, and thus leave nothing whatever to grumble at.

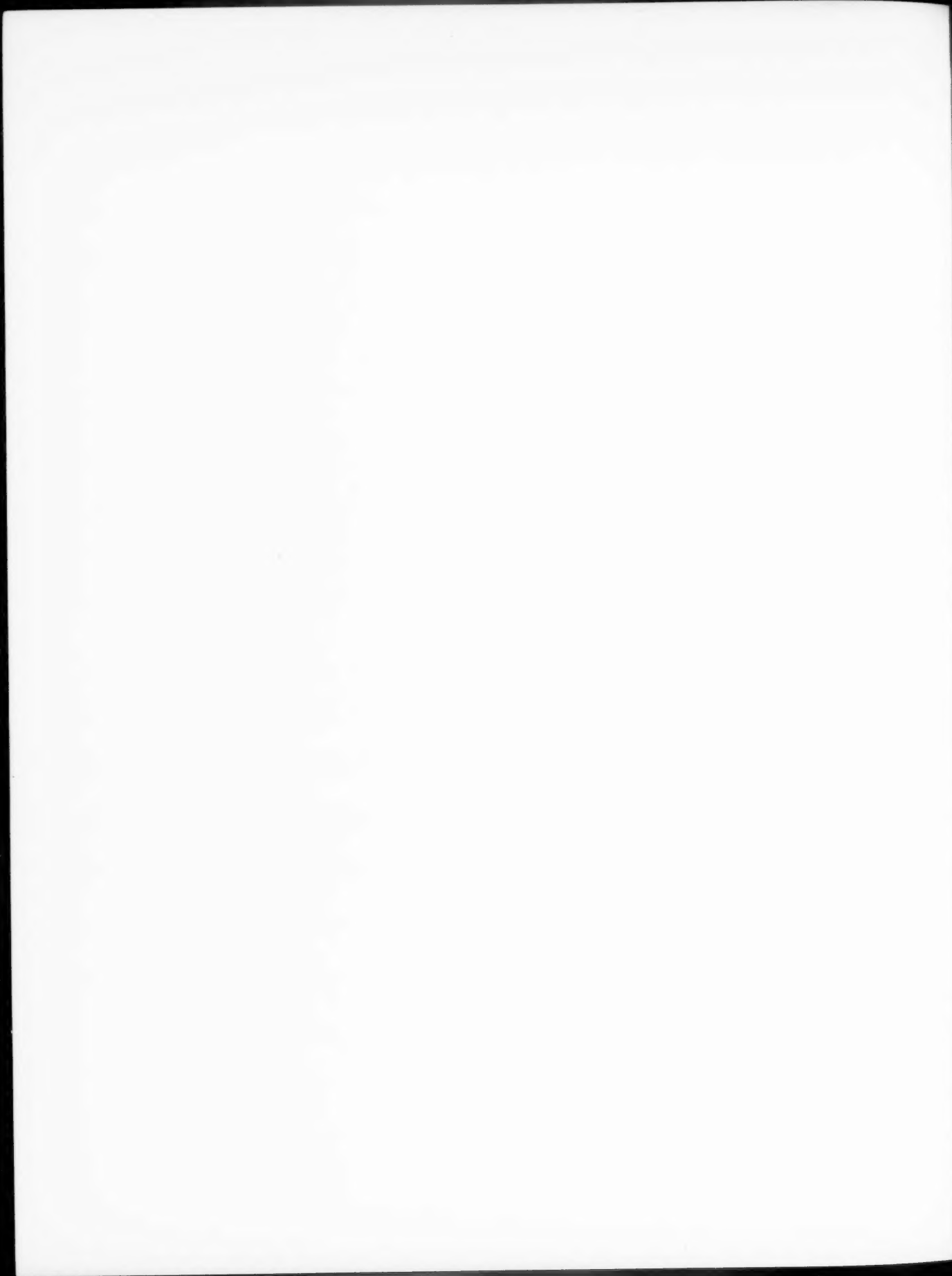
If, however, the method, thus outlined, enable anyone to avoid tedious litigation, or to checkmate a fraud, then such may prove useful to both client and architect.

[For tabular form, see page 507.]









1902	4 : 1	3 : 1	2½ : 1	2 : 1	30°	1½ : 1	37½°	45°	52½°	60°	—
January 21st	{ 10 a.m. 2 p.m.	noon	Feb. 1 noon								
February 16th	{ 9.40 3.15	10 a.m. 2.40 p.m.	10.35 1.50	noon*							
March 1st	{ a.m. p.m.	9.30 3.15	9.55 2.45	10.45 1.45	noon	8th noon					
March 16th	{ 8.15 4.45	8.45 4.5	9.10 3.40	9.45 3.5	10.20 2.30	11 a.m. 1.50	noon				
April 1st	{ 7 a.m. 5 p.m.	7.45 4.35	8.10 4.15	8.45 3.40	9.10 3.20	9.40 2.50	10 a.m. 2.20	noon			
April 21st	{ 6.35 5.25	7 a.m. 5.5 p.m.	7.25 4.35	8.20 4.5	8.40 3.45	9.5 3.25	9.30 2.50	10.30 1.40	noon 28th		
May 21st	{ 5.40 6.10	6 a.m. 6 p.m.	6.30 5.30	7.5 4.50	7.25 4.30	7.50 4.5	8.5 3.45	9 a.m. 2.50	10.45 1.45	noon	
June 21st	{ 5.35 6.25	6 a.m. 6 p.m.	6.30 5.30	7 a.m. 5 p.m.	7.20 4.40	7.45 4.20	8 a.m. 4 p.m.	9 a.m. 3 p.m.	9.45 2.15	10.45 1.15	noon = ½ height approx.
July 21st	{ 5.50 6.20	6.20 5.55	6.40 5.35	7.10 5.5	7.35 4.40	8 a.m. 4.10	8.25 3.50	9.15 3.5	10.5 2.10	11.45 12.20	
August 21st	{ 6.30 5.20	7 a.m. 5.7	7.25 4.45	8 a.m. 4.10	8.20 3.50	8.45 3.25	9.5 3.5	10.20 1.55	noon 50°		
September 10th	{ 7 a.m. 5 p.m.	7.30 4.30	7.50 4.10	8.20 3.30	8.45 3.15	9.25 2.40	9.45 3.20	noon			
September 21st	{ 7.15 4.30	7.45 4 p.m.	8.10 3.45	8.45 3.20	9.10 3.5	9.45 2.40	noon = 90° minus latitude as on March 21st				
October 24th	{ 8.30 2.50	9 a.m. 2.20	9.45 1.40	noon noon	17th noon	7th noon	noon Michaelmas				
November 15th	{ 9.20 2 p.m.	10.20 1.15	noon								
December 21st	{ 10.35 1.25	noon alt. = (90° - latitude) - 23½°	apparent declination								

\* Taken at Brighton: 50° 48' 45" N. lat.; 0° 7' 50" W. long. (Greenwich).



9, CONDUIT STREET, LONDON, W., 11th Oct. 1902.

## CHRONICLE.

### Sessional Meetings 1902-1903.

- Nor.* 3. President's Opening Address.  
*Nor.* 17. The Drawing of the Ionic Volute. By F. C. Penrose, F.R.S., Litt.D., D.C.L. [F.].  
 A Note on a Fragment of the Parthenon Frieze. By A. S. Murray, LL.D. [H.L.].  
*Dec.* 15. The Palace of Knossos, Crete. By Arthur Evans.  
*Jan.* 19. Award of Prizes and Studentships. Paper: 1903 Science Workshops for Schools and Colleges. By Professor H. E. Armstrong, F.R.S.  
*Feb.* 2. President's Address to Students. Presentation of Prizes.  
*Feb.* 16. College Planning. By Basil Champneys, M.A.  
*Mar.* 2. Election of Royal Gold Medallist.  
*Mar.* 16. Westminster Cathedral. By Charles Hadfield [F.].  
*Mar.* 30. Fire Prevention. By Horatio Porter [A.]. Together with a Report by the Science Committee on the Fire Offices Regulations.  
*Apr.* 20. Paper, by Edwin T. Hall. [Subject to be arranged.]  
*May* 4. Annual General Meeting.  
*May* 18. The Formation of the Ancient Style of Egyptian Architecture. By Sir Martin Conway.  
*June* 22. Presentation of the Royal Gold Medal.  
 Business Meetings: 1st December, 5th January, 2nd March, 4th May, 8th June.

### Trade Commissions.

Members have forwarded to the Secretary copies of the following circular addressed to them:

Wellington Works, Battersea Bridge, S.W.:  
 3rd October 1902.

DEAR SIR,—We beg to address you, although with some diffidence, fearing we may be misunderstood, but will explain our position briefly, hoping to enlist your attention.

We are manufacturers of varnishes, colours, and paints of all kinds, as well as oil refiners, and can offer at prices comparable with equal quality far below those current. The difficulty of getting representatives fully alive to the altered conditions of business, and first ascertaining buyers' requirements, compels us to conduct our business by correspondence, and we are willing to give that consideration which would otherwise be given in representatives' expenses in shape of a liberal commission for all business introduced to us.

We beg you will communicate with us on this subject, and remain, yours truly,

S. BOWLEY & SON.

The firm in question has doubtless acted in ignorance of the difference in principle between a profession and a trade. But surely the time has arrived for business firms to learn that architects regard the receipt of such circulars as an insult to their professional integrity.

### Light and Air: Mr. Quick's Investigations.

In a letter to the Secretary Mr. F. W. Quick mentions the causes which led him to take up the subject treated in his contribution to the present issue [pp. 505-7], and goes on to say:—

"I saw then that, if one could determine direction and altitude in relation to the object affected, the problem was one in simple trigonometry. Instruments are ever cumbersome and not always applicable. I dismissed them in favour of a simple needle-standard, cut to read decimally the shadow lengths to scale, simultaneously delineating direction thereof. From that I obtained the parabolic curve, and discovered how such varied and reversed. To clear the figure, the hour-angle circle occurred to me as advantageous in emphasising *direction* to time—which Mr. — can tell you has proved valuable. There, in a nutshell, you have the evolution of 'shadowgrams.'

"I soon saw how widely such must vary during the year; and I set to work on a series ten days apart throughout the year, so that by comparison of any pair the actual conditions for intermediate dates may be fairly approximated. The bulk of these I have now secured, but I am interpolating yet further in view of meeting any possible question which may arise, since there are some further curious points to determine. As I have advanced it to a definite certainty, I felt warranted in proffering thus much briefly—and trust that the future may enable me to enlarge its usefulness, so that the same may merit its record in the Institute JOURNAL.

"If it meet with approval, an extension may be undertaken in order to bring home more completely the effect of time differences, which are remarkably in evidence from 4th November to 14th February—the period of 'low-light' in this country. The simple fact of the sun's culmination varying *half-an-hour* in that period, during which the noon altitude is less than 25°, lends additional importance to the direction of such long shadows, and the period during which such may obscure any premises. There is a site in the town of — now banned by Ancient Lights: it is a valuable site; the old property has been pulled down, and the site lies waste, because somebody doesn't know how to 'get over it.' I could tell them in a moment all possibilities throughout the year, and how to keep out of the Law Courts, instead of standing idle. There is substance in such shadow."

## THE BEGINNINGS OF GOTHIC ARCHITECTURE, AND NORMAN VAULTING.

## THE DURHAM EXAMPLE FURTHER CONSIDERED AND COMPARED.

By E. W. HUDSON [A.].

I AM glad, but in no way surprised, to find that the discussion on this subject has been taken up by a French archaeologist, M. le Comte de Lasteyrie, of the Society of Antiquaries of Normandy, who has given his views on Mr. John Bilson's Paper (printed in R.I.B.A. JOURNAL, Vol. VI., p. 289 *et seq.*); and further, that on p. 350 *et seq.* of the present volume we have that gentleman's reply to his critic, with extracts from the criticism.

Focussing the general points into the main issue, the object of that Paper is to try to settle the claims of England as against different provinces of France for the honour of having first produced ribbed vaults in Western Europe; and on the actual date of the specimens at Durham Cathedral—as to which a bold claim is made—issue with the author is joined. Mr. Bilson puts forward c. A.D. 1104 for the oldest portion, and the French critic, c. 1133. These being the two dates which Rickman assigns as limits for the period of erection of the cathedral, to what intermediate dates must the several classes of its vaulting be assigned? \* There is, as usual, much to be said on both sides, and it is a privilege to weigh the evidence and set down here a few notes *pro* and *con* after so doing, offering my own impressions for what they are worth, until an English expert shall take up the subject. The importance of the question may be sufficient excuse.

The ground is to some extent cleared by both parties granting that a leading part was taken by the masons of the Ile-de-France in the rapid development of Gothic form and moulding. But the last word has not been said as to whether that school is entitled to claim more than that. The primitive forms of vaulting truly did linger to a later period elsewhere in France. (*Obiterdictum*.—In the matter of an early date for moulding voussours of nave and choir arches, I should claim priority for England; and no less true is it that vaulting ribs were much ornamented from about the middle of the twelfth century though retaining Norman character.) But it is a claim for admission of remoter antiquity in this regard which here concerns us.

\* M. de Lasteyrie condenses his opinion thus :—"À part peut-être dans les bas-côtés de la nef, il n'y a pas, je crois, à Durham, une seule croisée d'ogives qui puisse être antérieure à l'an 1133."

I doubt whether the claims of various provinces can ever be absolutely decided without fresh data, yet the consideration of them is not without interest and advantage. Dates suggested by the writers of the eighteenth to the third quarter of last century now seem much disputed—Dugdale, Wren, Stukeley, Grose, Walpole, Whittington, and others. Even Cotman, Pugin, Britton, Billings, Scott, and Viollet-le-Duc are put upon trial, and much closer observation and more careful research are upsetting old *in camera* and other antiquarian conclusions, but substituting sometimes very little more of exact knowledge. To have sixty years knocked off the date of Waltham Abbey, the glamour of Harold's name swept away, is, as Mr. Bond says, "portentous," and to the student somewhat disheartening, though such view in the interest of truth must go by the board.

Less than a century after the removal of the fear of the end of the world, so energetic and widespread was the church-building movement, so numerous, diffused, and varied the examples, that it is not surprising if the predilections and bias of different archaeologists, each jealous for his own quarter of the field, now operate against entire agreement upon comparison of notes; while antithetical conclusions are not seldom arrived at. What is wanted now, if the question is ever to be solved, is a commission of unbiassed experts, with patience to take evidence *pro* and *con*, to collate deductions, and to put the result in a concise form *ex cathedra*. Such, however, would be *rara avis in terra*.

Notwithstanding admitted rapid development at a later period in the Ile-de-France, we may, as to design and dimension, agree that Romanesque architecture in Normandy was, at the opening of the twelfth century, in advance of the Domaine Royal, Burgundy or Anjou; and though it is not strange that the provinces nearest to Italy were first inspired by outside influence from the south-east, adopting the pointed arch *in vaulting* only at an early date, it is strange that descendants of the piratical settlers in Neustria were so much to the fore in construction. As I said in a former Paper, this was undoubtedly very much due to Lanfranc and his school arriving from Pavia and taking up duty in 1042, or the result of his revisiting Italy in 1050, at which very time the great ribbed vault of the nave, 40 feet span—probable prototype of all Gothic vaulting—was being

constructed at the church of Sant' Ambrogio, Milan.\*

Viollet-le-Duc says:—

"Les Normands devinrent promptement d'habiles constructeurs, et dans leurs édifices de l'époque romane ils avaient fait des efforts remarquables en ce qu'ils indiquent une grande indépendance et une perfection d'exécution exceptionnelle. Déjà vers la seconde moitié du XII<sup>e</sup> siècle ils faisaient des voûtes en arcs d'ogives à arêtes saillantes, alors qu'en France on ne faisait ces sortes de voûtes que dans l'Île-de-France et quelques provinces voisines."

The approximate date above given favours M. de Lasteyrie's views in regard to Durham, but is more than a generation too late for Mr. Bilson's claim. The exception of the Isle of France and some neighbouring provinces, however, is an extensive one.

Another feature of advance was the division of the capitals, and is thus alluded to by the same writer:—

"Avant cette époque ils savaient le parti qu'on peut tirer des sommiers, et ils divisaient leurs chapiteaux, sinon les supports verticaux, en autant de membres qu'ils avaient d'arcs à recevoir."

I think the presumption is that "arc" in the above quotation applies to semicircular vaults (*en plein cintre*), but it is to be assumed from the context that diagonal ribs (*nerfures*) are not intended at all in this paragraph; and division of a capital into rectangular parts on plan may only mean for the reception of the main arcade, cross-ribs of aisles, and for the wall-shaft next the central alley, running up for tie-beams of the main roof.

Mr. Bilson's amended claim is, I take it, practically in regard to "*voûtes en plein cintre à arêtes saillantes*" (*nerfures*), as being from the first onset in existence at Durham *not later than the fourth year of the twelfth century* (aisles), and *en ogive* about the middle of the third decade, in wide spans.

At the first blush it certainly does not seem likely that the inception or execution of a wide-span ribbed vault could be adjudged to England, especially in the early years of the twelfth century.

Nevertheless, the French writer just quoted goes on to speak of the equally advanced state of English work at that time, and gives an instance:—

"Ainsi dans la partie romane de la cathédrale de Peterborough les voûtes des bas-côtés du chœur qui s'ouvrent sur les transepts sont, pour l'époque, conçues et exécutées avec autant de savoir et de précision que celles du domaine royal de France, de la Champagne, de la Bourgogne et du centre."

This is not conceding much to us, except as to the Domaine Royal.

Granting there are signs of advancing style at Peterborough, yet the ribbed vaults there referred to were, according to documentary evidence, constructed between 1125 and 1140, or say c. 1135;

\* Cattaneo.

so that they do not help the evidence for very early ribbed vaults in England over wide spans, and if these narrow-span semicircular vaults are to be considered "advanced" specimens, what must be said of those in Durham nave and transepts, which we are asked to consider as contemporary or even somewhat earlier? By analogy we might put them at least as late as c. 1150. M. de Verneilh dates those ribs after 1150, and considers them additions; but so far as chronology is concerned this is unnecessarily late.

In many respects Peterborough and Norwich are looked upon as among the least advanced of English cathedrals; and, so far as I know, there is no remoter date at Peterborough to confirm even the modified claim in Mr. Bilson's reply to M. le Comte for early development of rib-vaulting in connection with *semicircular* work.

Morienval, on which at present the French claim for priority in *pointed* vaults was based, has now been brought down from 1110 to c. 1123, if not,

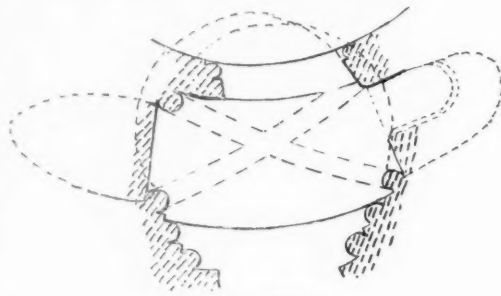


FIG. 1. MORIENVAL.

as some assert, to 1135. Its large torus-moulded diagonal rib favours an earlier date than that. Fig. 1 is a sketch plan of one bay of its narrow ambulatory.

Incidentally, it would be valuable to have confirmation of the supposed early date for Lessay, which Mr. Bond puts as late as c. 1130, this being ninety years after the generally accepted date (1040) for the foundation of the establishment there. Want of space, however, forbids further reference here to an interesting example.

The unsettled state of the kingdom of England (through opposition to the Norman yoke, followed by the war between Matilda and Stephen) was for some time more pronounced than that of the Duchy across the Channel; and we know what primitive and badly constructed work was done in England, even in the royal palaces. The masonry of old Westminster Hall, dating *ante* 1100, is witness thereto, and the falling of cathedral towers built with rubble-filling between badly bonded ashlar laid in poor mortar, &c., does not suggest pre-eminence in solving the problem of the age in vaulting wide spans. Winchester tower fell in

1107, others followed, and work generally was poor in quality and conception till the bishops got foreign masons over. Wide joints prevailed, even in sound work, up to, and in places even later than, c. 1115, when Bishop Roger's masons astonished the observer with the fineness and regularity of the ashlar. But the point is, Was architecture in the North of England in 1104 so much in advance of the Duchy, or any part of France?

Mr. Bilson thinks it was, and quotes Winchester and Worcester crypts as a proof of English pre-eminence; but surely these were both only groin-vaulted? Do they not show signs of foreign influence in form and detail, probably produced by imported masons, or masons under Norman masters? True it may be, and no doubt is, that after the civil war was over a vast amount of fine work was carried out, and elaboration of detail and moulding rapidly took place. The chevron, such as we see on the ribs at Durham, the billet, the scallop, and the bird-beak, coupled with much-moulded archivolt, became general, till the Early-English style sprang into being.

Mr. Bilson does not claim for Norman architects the invention of Gothic architecture (p. 350, *ante*), like Mr. Bond,\* but he says he does believe that "the Norman architects adopted and developed the ribbed vault in association with the round arch alone, *independently of any influence from the Ile-de-France*, that architecture was more advanced in Normandy and England than in the Ile-de-France, and that vaulting still extant at Winchester and Worcester proves it." (The italics are mine.) Did they do it with diagonal ribs, and where and at what date was it done? Was not ribbed vaulting of earlier date than any in England constructed on the Continent, and, if so, which centre, or which outlier, was the first? *Hic est, aut nusquam, quod querimus.*

It is not clear why, because too much has hitherto been accorded in the way of preference to the Ile-de-France, and because there is no objection *a priori* to the theory that other provinces developed the rib vault as early, or earlier than that province, we should assume that to be strong positive evidence that they did so. It is negative evidence that Mr. Bilson deprecates. The lack of grandeur and dimension in the nave of a rich abbey like Saint-Germain-des-Prés† (as compared with English churches) is the very fault that induced Norman bishops in England to pull down Saxon churches, and any exceptional reticence in that design does not, to my mind at any rate, argue favourably for Durham's claim to pre-eminence by half a century.

It is true that Parker, editing Rickman,\* says he thinks Normandy was not in advance of England at all, which practically at an early period puts England in the front place. But Gould† says, "*None of the Norman buildings were vaulted or intended so to be, and all vaulting on Norman piers and walls is subsequent.*" (Italics mine.) This assertion, though by a capable writer in many respects, is too sweeping in character to be accepted seriously, for all large Norman ecclesiastical buildings from very early date may be said to have been sought to be vaulted (especially where stone was plentiful), and were so covered whenever span admitted, although narrow groined vaults only were ventured upon in early examples.

Herren Dehio and Von Bezold believe that the Normans intended to vault all the main spans of their churches.

I have no doubt that great changes in workmanship were seen when the monk gave place to the lay mason; but can that period be ascertained with any general certainty? The Guilds arose about the middle of the thirteenth century, and master masons took control of the piece-work men, whose marks on the face of the stone showed the extent of each man's labour. But masons' marks were used from earliest ages, and the study of them is but in its infancy.‡ Did the monks use them as well as the laymen? We are told that St. Hugh went about in a mason's blouse, carried material and worked alongside the monks on buildings, and that he reprov'd an aristocratic friar who thought his gentle birth made it *infra dig.* to carry the hod, by taking it and going up the ladder himself, and on coming down passed it to the brother, saying: "Now you need not fear that your mates will look down upon you, seeing I have set the example and carried the hod myself."

Probably even later than the end of the twelfth century the monk was priest and artificer, and the superior members of the hierarchy, being of the travelled and learned class, disseminated new ideas from diocese to diocese, and monastery to monastery; but the very dual and different nature of service in church and workshop prevented the highest development of craftsmanship. In the thirteenth century, when laymen of the Guilds of Freemasons were superseding the monks, the fineness of the work was more and more marked. Yet even between Bishop Roger, whose highly finished masonry was remarkable, and Bishop Poore, Joscelin, or Lozinga, there was a period

\* *Gothic Architecture*, p. 37.

† *History of Freemasonry*, vol. ii. p. 277.

‡ It is not clear why Viollet-le-Duc restricts the use of them in France to "le douzième siècle et le commencement du treizième," or to "l'Ile-de-France, le Soissonnais, le Beauvoisis, une partie de la Champagne, à Bourgogne, et dans les provinces de l'Ouest." Vol. vi. p. 454, *Dictionnaire*.

\* JOURNAL R.I.B.A., 3rd Ser., Vol. VIII. p. 272.

† The sanctuary there, however, is, according to M. Lefèvre-Pontalis, as late as 1163, and Gothic construction is so far evolved as to have adopted the flying buttress.

of nearly a century of varied work and workers, wherein all kinds of detail and ornament, as well as plan of abbatial establishments, were produced throughout the country; nevertheless, foreign influence, as in the work of alien priories of Cistercian and other orders, gradually passed away.

#### DURHAM.

In considering the corner-stone of Mr. Bilson's edifice of contention for precedence for this fine Romanesque example, there are, as already stated, twenty-nine years in dispute (1104-33). As a general statement it may be said that Mr. Bilson believes the ribbed vaults are coeval with the erection of the walls. He asks (p. 345): "Are these high vaults the original covering of the church?" and asserts that "every part of the church was covered with ribbed vaults between 1093 and 1133." Again, speaking of ribbed vaults over main spans: "The vault over the north transept of Durham is probably the oldest of such vaults still existing." For the old vault of the choir was replaced later on, and Mr. Bilson assumes that the first one also was ribbed (p. 311). He says, further: "The Normans, before the end of the eleventh century, were already covering their choirs with simple groined vaults." But where did they so early use ribbed vaults? Not in choirs, naves, and transepts; but in crypts, tower basements, ambulatories, and other places of narrow span, the earliest examples, whatever the date may be, would be found. If all the vaulting at Durham was executed in the first onset, and all except the choir vault remains to this day, how is the extreme difference in detail and ornament to be accounted for? If the monks constructed the nave vault—i.e. the latest portion of it (except, of course, Bishop Pudsey's work), they outdid the master-mason who preceded them.\* The chapter-house rib shows a marked advance as to ornament over the nave, yet they are dated almost synchronously.

[*En passant*, a study of Bishop Alexander's vault at Lincoln may show some correspondence, though it is of later date than that claimed for Durham.]

M. le Comte de Lasteyrie, who has not studied on the spot, adopts Mr. Gould's view, and thinks the whole vaulting is of subsequent date to the walls. In the absence of a fire, a timber roof (unless temporary, awaiting a clerestory) would hardly be replaced, say, twenty-five years after

erection; yet one must own to the short life of some early Norman churches, entirely or partly pulled down for one reason or another.\*

A change of design as to mode of roofing actually made during construction would, if evident, give some probability to an earlier date, but I do not think this can be clearly shown, although Mr. Bilson thinks something of the kind occurred in the south transept. The artificer in those days thought in stone, and designer and executant were often identical. Hence variations in the general plan of a cathedral and in details of construction were frequently made, and in some cases the fact is apparent in the work even now, but not always. In the Regulations of the Guild of Masons of Strasburg,† needless interference with a preceding member's unfinished work is forbidden, and no doubt this was a general rule with the guilds.

If M. de Lasteyrie would make a personal examination of the jointing, the dressing of the stone, the method of junction of the ribs, the fitting of the extrados, the web, the outline of the groins, the profile of the diagonal ribs, and particularly the masons' marks, he might come to a different conclusion from that formed upon inspection of the Fig. 12 in Mr. Bilson's original Paper, upon which largely his views are based. Architectural evidence there is very conflicting, but the masking of part of the springers is not a strong argument for reconstruction. I think the rude lozenge form of keystone is suggestive of early date;‡ but the number of members and the ornament in some of the rib-mouldings, leaving out of account the great width of span, are against it. I think the points named are anomalous and contradictory; yet a suggestion at least of untradesmanlike work, in conjunction with an advanced idea, is not out of reason, and a pertinent case is William of Sens' masonry at Canterbury.

Mr. Bond doubts the record of Symeon's continuator,§ that Flambard had finished the high nave

\* Professor Freeman says: "The Norman prelates pulled down and rebuilt the English churches mainly because they thought them too small."

† Clause VIII. runs thus:—"If any one contracts for a work, and gives a plan for it how it shall be, the work shall not be cut short of anything in the design, but he shall execute it according to the plan which he has shown to the Lord, cities, or people, so that nothing be altered on the building, unless it be that the Lords will it so, then may he alter it according to the Lords' wishes, but without seeking undue advantage"—(Gould, *History of Freemasonry*).

‡ Have the nave ribs shouldered keystones? The two churches at Devizes, dated c. 1125-30, are probably the earliest with shouldered ribs in the West of England. This favours, perhaps, an earlier date for the aisle vaults of Durham, where the lozenge shapes which are the specific vaults referred to in the footnote, p. 299 *ante*, occur.

§ The wild superstitious legends mixed up with the history do not necessarily discredit dates.

\* Till de Carileph's death the monks, we hear, were only doing the domestic buildings; after that they are said to have taken up the church work (as to which it is probable the aisles even were not then vaulted), and had advanced as far as the nave in the three years' interregnum; then Flambard came and carried up the nave as far as the vault by 1128. (By what masons—monks or laymen?) Then we hear the monks again came into requisition still later.

vaults (c. 1128) at the time of his death; \* and, as to the choir vault dating c. 1100, he says that if allowed it would prove that "English builders were a generation ahead of their Romanesque brethren anywhere on the Continent" (R.I.B.A. JOURNAL, Vol. VI., p. 20). Mr. Bilson, however, asks for this in regard to their pre-eminence. "*Hoc quoque curo.*" How are the chroniclers to be disposed of? Mr. Bond believes "their likes and dislikes" may account for false statements.

At Durham the order of work was this, viz.:—William de St. Carileph, appointed bishop at the end of 1080, was expelled, and in exile held a position in Normandy from 1088 to 1091, during which period it is supposed he formulated his ideas for a large church. Then he came back to Durham and began the cathedral at the East end. The foundation-stone was laid in 1093. He died in 1096, when part of the walls were up, but could hardly have included the aisle vaults. After three years, in which the work was taken up by the monks, Flambard came in 1099, and carried it on till his death, 1128. Gould says he was a lawyer and not an architect. It is not clear how the reputed son of a priest obtained legal training, but his extraordinary reckless ambition is undisputed. At all events (unless the monks kept on working under him), he knew where to get good help from laymen, both as workers and contributors to the buildings. The ejection of the secular monks may have caused modifications in the design. Is there not a noticeable demarcation yet to be defined in the work of these men? Galfred Rufus came, 1133 (the limit year in the contested date of vaulting), and he ruled till 1140, and it may be he did extensive work though it found no chronicler. Then Pudsey (1153–93) started the Eastern chapel, which failed structurally, and the dressings were used by him in the new Galilee Porch.

As regards Carileph's work, Gould† says: "The Norman buildings in England offer marked characteristics in appearance to those on the Continent, and if de Carileph brought his design for Durham from thence, all I can say is that it is different in character from anything now to be seen there." But Mr. Bond, in his interesting paper on "Documentary and Architectural Evidence," says of abbeys in Normandy: "There is nothing in the planning, construction, ornamentation that is strikingly dissimilar to the eleventh and twelfth century work in England;" and he instances Durham, Ely, Winchester, and Gloucester there, and the two abbeys at Caen, that at Jumièges and Boscherville across the Channel.

To those who are unable to study these churches, Ruprich-Robert's book may be compared with the

drawings in Mr. Bilson's paper, and Blore's plates in Surtees's *History of Durham*.

The natural inlet to England from Normandy for the style seems likely to have been *via* the southern ports, Porchester, Chichester, and Shoreham, to Hants, Sussex, and Surrey; perhaps by Winchelsea and Sandwich, to Middlesex and Kent; and yet, unless we assume that (by Carileph's migration from Christchurch to Durham) the best phases of construction of the period were carried still further overland to the North and East of England, we must admit a second or more inlets from the Continent by sea, perhaps from Bec to some East-coast port, as Lynn, Hull, Scarborough, Newcastle to Durham, and so to Hexham and Carlisle on the West, unless the two latter were inspired from the Western centre of Christianity at Iona, like Lindisfarne, Jarrow, and Monkwearmouth, still older foundations.

It would be a singular triumph for Durham and Flambard if it could be proved that English masons there first produced a pointed ribbed vault in 1104; but I think much more evidence is required in proof of it. Bishop Roger's nave vault at Lincoln was c. 1123, and examination of traces against the West towers might afford some light as to details of its construction. If we trust Giraldus and John de Scholby, it was 1141 when Bishop Alexander gave Lincoln a vaulted roof.

Mr. Bilson apportions and dates the Durham vaults thus:—Choir 1104, in Flambard's fifth year, aisles naturally included; north transept before 1110; south transept before 1125. Nave vault 1128–33, i.e. from his death to five years after it; but he goes on to say: "He completed the nave as far as the high vault" (p. 300), and with the nave naturally its aisles. *But that need not include the vault.* Did it do so? On this the issue hangs. In the two easternmost bays the diagonal ribs are moulded, but in the others a chevron on either side is applied, and these are of the later date. Having Devizes in mind, one can hardly believe that shouldered diagonal-ribs can be found in the first decade of the twelfth century; but if "*soon after*" the tower of Winchester fell (in 1107) the transept aisles there had them, there can be no objection (although there is doubt as to 1104) to putting the date c. 1120 for the simpler moulded of the Durham vaults, with the primitive lozenge-shape keystones, which are the sole portions which M. le Comte de Lasteyrie excepts in his opinion that "nothing is anterior to 1133." The nave vaults are essentially different. There the elaborate rib decoration seems to me clearly indicative of late date, and I do not think that the ornament could have been added at a yet later date to existing plain ribs. The zigzags on the edges could not have been cut out of a hollow member, such as exists in the other cases; besides, the difficulty of getting at the work for merely ornamentation

\* The walls only, not the vaults themselves. If Malmesbury Abbey, after 1139, is the oldest pointed vault, Durham nave would be of Galfred's time, to be merely synchronous.

† *History of Freemasonry*, vol. ii. p. 263 (1883).

makes it unlikely that scaffolding would be erected unless for entire renewal. Nevertheless, the difficulty has, we know, been overcome—*e.g.* by the enthusiast carver who treated the ribs of the Abbey of Saint-Riquier, near Abbeville, in such wise, until his fatal fall from the scaffolding stopped it. Durham, I believe, has later embellishments, added nearer the ground, and, if I am not mistaken, the south door from the cloister has had an outer order of projecting archivolt and column of Transition type added to the Norman orders within the thickness of the wall (see plate in Surtees's *History of Durham*).

Now, in the south transept there seems to be a distinct difference in the five courses of masonry lying between the top of the triforium arches and the clerestory window-ledge; they seem rougher than that of the triforium and of the main arcade below, and if none of it has been redressed or refaced, the tooling and masons' marks should be carefully compared. Suppose Flambard's work to end with the triforium arches, and those upper courses and the clerestory itself to be the work of the monks (who had, except perhaps in the interregnum, been up to then engaged on the domestic portions), then the question arises, Did they boldly attempt to build the vaulting at once, and happily succeed, or did they roof with timber, until Galfrid came in 1133? Mr. Bilson thinks that at this stage they intended to abandon vaulting and substitute wood, and perhaps did so; but they either altered their minds (or some one else did), and retrograded to old forms of vaulting. What have the stones to say about this? What—if anything—do documents say of this prelate's building work? So far, it seems, they say very little as to building during his occupancy of the see.

Mr. Bilson can, perhaps, tell us more details than already given—*e.g.*, about the masonry, and whether the walls of clerestory, triforium, and vaulting are the same kind of stone; more details of the material, the size and dressing of blocks next the ribs, the make of the springers,\* and, most important of all, the correspondence of masons' marks in various portions, such as vaulting, shaft and rib, compared with wall itself, and whether the voussoirs are tapered radially or not. As I said in a former Paper (*JOURNAL R.I.B.A.*, Vol. VIII. p. 364), further evidence is wanted on the conflicting views expressed regarding rib additions made to groined vaults.

The barrel-vault in the domestic offices should not be overlooked in comparing the marks and the stone used in 1091 with later work.

It does not follow, *a posteriori*, because the

\* The different pattern of zigzag in some of the lower springers has not been satisfactorily explained. Can they have belonged to an earlier vault, or is it mere caprice in pattern by a change of the masons?

choir was revaulted in the style of the period (thirteenth century), that the other vaults are not reconstructions because they are in an early style.\* Can Leland's date of 1250 (query, whence derived?) be so certainly out of the question for the nave vault? The answer is that the webs not being ashlar is fair evidence against that date. I scarcely think if ornament of a style of years ago was adopted, the mode of construction would also be revived. The double corbels carrying the springers were probably insertions; in fact, they are admitted so to be. The sub-bays are not all spaced exactly, and the distances vary from the hood-mould of the triforium arches. There are no wall shafts. Yet, if there was once a flat wooden ceiling above the clerestory, it is plain that double corbels (as utilised relics thereof) would have been unnecessary for tie-beams; besides, they are too low even to take struts to a tie-beam at the completed level. (See photograph at head of Mr. Bilson's paper, and fig. 26, p. 315, Vol. VI.)

What may be called the forgery theory—"absurd theory" in Canon Greenwell's opinion—has obtained unreserved credence by John Carter, and although his folio monograph was published in 1801 (by the Society of Antiquaries), it is as well to repeat his version, if only that its error, if clear, may be refuted. Describing the sequence of construction he says (p. 4):—

"The side aisles both of the nave and choir were vaulted with semicircular arches, groined, and the ribs of the groins carved, but the nave and choir were open to the timber roof." (Query, without a flat ceiling, in waiting for the vaults?)

Then, after stating that the first addition to the building was Pudsey's Galilee, he continues:—

"The vaulting of the nave exhibits the next step in the change of style. This was the work of Prior Thomas Melsenby under the auspices of Bishop Poore. The Norman zigzag ornament is used along the ribs of the groins, although the whole vault is pointed."

This would make it between 1229 and 1237, contemporary with the Chapel of the Nine Altars.

This statement is more specifically repeated in an account published by Andrews, of Durham, in 1833, and attributed to the Rev. J. Raine:—

\* M. de Lasteyrie thinks the choir aisles were probably reconstructed as well as the choir itself in the thirteenth century, but on the original plan with ribs added (p. 355 *ante*).

I do not think we sufficiently recognise the extent to which Medieval restorers worked in earlier styles, and occasionally forgot their chronology in moulding and sculpture. There is, or was, a notable instance in the corbel-table of the Romanesque church at Huberville in Normandy, where a grotesque head has a tobacco-pipe in its mouth, in a building dating 350 or 400 years before European knowledge of the herb! The sculpture looks synchronous with that in the remainder of the corbels, and if the blocks were left plain for centuries and then carved, the style does not betray it.

"The original wooden roof of the middle aisle was removed, and the present groining of stone substituted in its stead by Prior Thomas Melsonby, who evinced considerable taste in associating the architecture of his period with that of a century before his time."

"the architects of old did not imitate the style of their predecessors."

Reference has been made to the meaning of the word "*testudo*" applied to the disputed work. I



FIG. 2.—DURHAM CATHEDRAL: SOUTH TRANSEPT, LOOKING NORTH.

Canon Greenwell rejects this version altogether, because the work was not in the then prevailing style, and for other reasons of recorded repair to the work later on. But, in the face of many exceptions, one can hardly agree with him, that

do not think it should be restricted to vaulting, but may apply to a ceiling, or overlay, or veneer, whether flat, vaulted, or *en dos d'âne*.

The Canon's note of a difference in the size and nature of the stone used in the nave arcade and

wall over it, might well be followed up in all the rest of the cathedral.

Fig. 2 here given is a view of the junction of the south transept with the crossing, looking north. Over the arcade on the east side there are wall-shafts instead of corbels (double at the sub-bay); while on the opposite side (outer wall next the cloister) wall-shafts are absent altogether and

elaborate, and tell against the early date. Examples of similar ornament of ascertained date may be looked out for comparison, and there are striking resemblances to that peculiar springer (shown in the phototype of part of the nave, p. 315, Vol. VI.) in the details at St. Peter's Church, Northampton (A); at Kilpeck Church, Herefordshire (B); and at St. Mary's Church, Leicester (C), fig. 3, dated c. 1150-60; and assuming they are contemporary with these springers it would put them into the period of the interregnum, about three years before Pudsey's advent. (D) is from Canterbury Cathedral, date c. 1178.

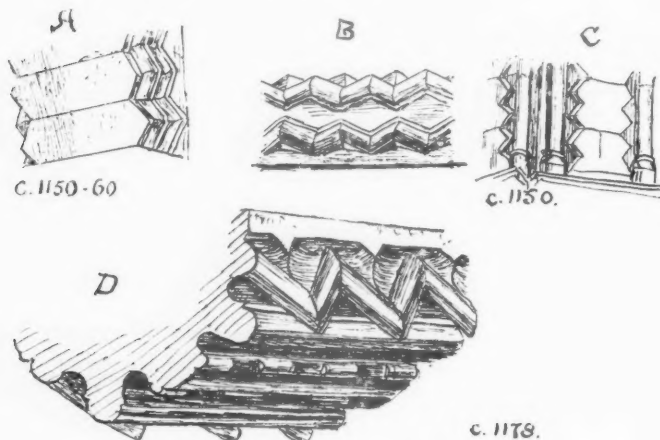


FIG. 3.—EXAMPLES OF ZIGZAG ORNAMENT.

corbels are used. The height of both cap and corbel on either side here is right for a tie-beam—i.e. above the mouldings crowning the triforium arches (instead of halfway up the latter, as in the nave); and yet, to have had here a flat ceiling temporarily in the transept would have cut off two-thirds of the arch over the crossing; which, as a deliberate effect in ancient work, is improbable, and would be left for adoption by a noble restorer of the nineteenth century.\* Even canting the sides as at Ely would not prevent this.

At p. 318, Vol. VI., the east side of the north transept is shown, and, *except in the clerestory and vaulting*, there is correspondence—notably the double wall-shaft in each. This difference in the clerestories may have something important to tell if closely followed.

Mr. C. H. Moore calls the nave vaults "English of the middle of the twelfth century." With a *circa* prefixed it is a pretty safe judgment. But Mr. Moore dates the aisle vaults at Peterborough c. 1175-1200.

The mouldings of the ribs, as I have said, are

\* At St. Albans Abbey. It seems very probable that Peterborough had, as pointed out, two distinct wooden ceilings at different levels, at different times, over the same portion of the cathedral.

The obtuseness of the zigzag and the rounding off of the salient angle in the nave ribs, are scarcely compatible with early work, though a likely modification by an imitator. I should say, too, that the acutely pointed zigzag was first in date, then the equilateral, and finally the obtuse form, although it must be admitted that in Normandy the two first-named appear in contemporary work.

It must be admitted that in other churches ribs with heavy mouldings worked on them are dated contemporaneously with the rectangular heavy section used at Gloucester, &c., in which cathedral,



by the way, German writers say the earliest rib-vaults in England are to be found. This would refer to the crypt (one bay of which is sketched in fig. 4), the diagonal ribs additions after settlements, and the date given only approximate. The heavy zigzag on the transverse rib may be compared with A, fig. 3.

The same difference of opinion exists in regard to the date of the vaultless nave at Norwich. That cathedral was begun in 1096 by Bishop Lozinga, who died in 1119. He is credited with having built most part of it, including the western tower up to the roof level, and Bishop Eborard, his successor, with having finished the nave (1121-45) with a wooden roof, which, after destruction by fire in 1463, was replaced by lierne vaulting. There is no doubt that the Norman shafts which run up from the floor here were only intended for bases of tie-beams for a wooden

roof, years after the period at which Durham is said to have been entirely covered with ribbed vaults. But the nave aisles (except some bays at the west end) are, and always have been, primitive quadripartite groined vaults. French influence introduced the apse and ambulatory, as at Ely and Peterborough, yet no ribbed vaults. Taking 1119 as the date of their erection, it is at least

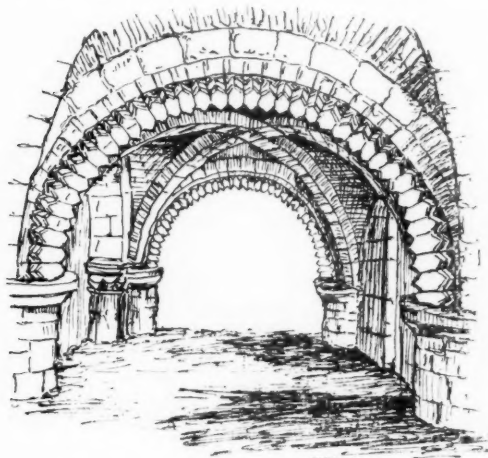


FIG. 4.—GLOUCESTER CATHEDRAL: ONE BAY OF CRYPT.

unlikely that the wide-span Durham ribbed vaults were fifteen years *ante*, or the elaborate nave vault contemporary. As the eastern portion was begun first, the aisle vaults would be reached somewhere about 1104, the date claimed for the earliest vaults at Durham.

It must be remembered that as late as *c.* 1110 coursed rubble barrel and groined vaults were constructed at Sherborne Castle, Dorsetshire, notwithstanding that in military architecture the greatest strength is required. Can we possibly accept the statement that Durham nave is "exactly dated, except as to walls"? (Footnote, p. 310, Vol. VI.)

Taking the various points as far as yet recorded into consideration, I think it probable the monks completed the clerestory walls of the nave and transepts from the level where Flambard left them at the date of his death, 1128, and that they roofed over with wood temporarily, but afterwards, at least by the middle of the twelfth century, the vaulting replaced it, but under what bishop, and by laymen or monks? Are not documents silent as to Galfrid being a large builder? Pudsey's other recorded work puts him out of the question.

If the issue could be narrowed to one French example to be pitted against one in England, we could get a step further. The prospect at first held out in the report of *Le congrès archéologique de France* for 1877, by setting Morienvall *facile princeps*, was not realised; although it agreed to set this example back into the Romanesque style, in spite of pointed arch and diagonal ribs, and as embodying almost absolutely late eleventh or early twelfth century characteristics. But the door is opened to doubt by one sentence, here italicised:

"Le chœur de l'église de Morienvall mérite à cet égard d'être cité tout le premier: la nervure et l'ogive avaient été fort peu pratiquées lorsqu'il fut construit, et peut-être, ou plutôt selon toute probabilité, c'est là que les habitants du Valois virent pour la première fois ces germes féconds d'un nouvel art de bâtir."

Where, then, in France, or anywhere outside Lombardy, was this earlier "very little" rib-vaulted work executed? Again, I understand that French archaeologists do not now maintain for Morienvall the argument for the "end of eleventh century," or even 1110, but take 1122 as the documental date, which puts this so far earliest known Ile-de-France example contemporary with the more advanced zigzag ornamented rib of Mr. Bilson's Durham analysis. M. Anthyme Saint-Paul thinks it may be even later than 1122, which is destructive to the claim of the Ile-de-France. Is it that a general falling in of wide-span rib vaulting between the date of construction of Sant' Ambrogio and that of Morienvall, Lessay, the abbey at Caen, or Durham, accounts for its non-existence; or is it that not any was ever constructed? There is a gap of fifty to seventy years of sterility in this one respect unaccounted for, if we accept M. de Dartein's view that the Lombardic example is the original vault, and it was the prototype of all that followed. Here the advocate of the alternative of spontaneous inception in different localities will have something to say on the subject.

Mr. W. H. St. John Hope has said that the Account Rolls have been gone through, and are being issued in print by the Surtees Society, and further light may thereby be given.

Altogether, considering the data and the deductions of other archaeologists, probability seems against Mr. Bilson's views of early date; in fact, the early date is not clearly proven, though we may sincerely wish it might be, and are glad of such a champion, and to have a record of his views. I wish they could be clearly substantiated, as this would accord with those I have held in regard to a London example, as to which I may have something to say on another occasion.

## DUTIES AS TO DRAINS.—III.

By ALGERNON BARKER, Barrister-at-Law (Newcastle-on-Tyne).

## "Necessary for the Effectual Drainage of such House."

THERE are a great many points to be discussed as to the meanings of these words. First, what is meant by "necessary" and "effectual"? Is it bare necessity or expediency? Then what is "drainage"? Must it be for rain-water as well as foul fluid? Then what is meant by "house"? Must the drains drain every part of it, however low, so that though on the basement there is nothing but the beer-cellar, and no liquid spilt except that which drips from the beer-tap, the drains must be capable of draining, say, a possible sink which might be put there? Again, does "house" include outhouses and the like?

74. What Standard of "Necessity" and "Effectuality"?—The matter on which the surveyor reports his facts and the Council deliberates, decides, and commands, is necessity for effectual drainage; that is to say, the problem for them to consider is, What system of drainage would be "best for the convenient and proper drainage of the house"? (See *Lewis v. Weston-super-Mare*, 40 Ch.D. 55, and JOURNAL R.I.B.A., 27th July, 1901, p. 448, col. 1 (middle), and Fitzgerald, ed. 1895, p. 22.) (Cases on compulsory purchase are distinguishable—e.g. *Galloway v. London*, 1 H.L. 35.)

75. Drainage: Need it be for Rain-water?—Then what does "drainage" mean? Must the ground drains be effectual for carrying off roof-water? They must (*Holland v. Lazarus*, 66 L. J. Q.B. 286); and perhaps rightly so, for if this were poured into an over-small drain mischief would ensue. The case of *Matthews v. Strachan* (pars. 54, 66, 70) must have been decided differently had the house itself required the double system. (Gutters and drain-pipes seem to be "drains" (par. 69); but this is a different question. I am asking if the ground drains need be large enough to carry rain-water.) But the drains need not be large enough for flood-water from fields (Fitzgerald, P.H.A., ed. 7, p. 22).

76. "House": Dry Cellars need not have Drains Provided.—In the P.H.A. I think that the lowest level of the house which can be considered for the purpose of drainage is the plane in which the pipe from the lowest sewage fount planned or made can be conveniently taken through into the ground outside. The section, as stated above, requires

drainage for the house as it is, or is intended to be ("such house"), not as it might be. This argument is all the stronger when we observe that section 75 above mentioned of the Metropolis Management Act of 1855, after "such level and fall," continues, "... so that the same shall be available for the drainage of the lowest floor of such house or building." This provision being omitted in the P.H.A., was intentionally excluded (note j, 1).

77. Does "House" Include Outhouses?—I do not think that outhouses are included, for reasons already given when we considered what constituted part of a house (par. 19, and summary par. 22). Of course, if these outhouses are "houses" *per se*, the case is different (see "House or not?").

## Destination.

78. Any Sewer. Can Drain-owner Choose?—The sewer, as we shall see, must be a sewer which the local authority are entitled to use; but can they choose our sewer for us, can we choose it, or must it, *malgré* both builder and authority, be the nearest sewer? The P.H.A. of 1848, section 49; the London Sewers Act 1848, section 46; and the Metropolis Management Act 1855, section 75, in similar sections expressly gave the local authority power to choose. This power is omitted here, and therefore excluded (note j, 1).

The drain-owner should, for reasons given under "No trespass" in my former lecture on "Rights," 27th July 1901, p. 444, col. 2, par. 3, drain into that sewer within 100 feet, the excavation to which would least incommode the public. This may not always be the nearest.

We shall see, however, that if it is impracticable to reach a sewer he is excused from using it at all (par. 83), and on the same analogy he can, to a certain extent, consult his own convenience (Max. 221 b, c, 222; *Matthews v. Strachan*, 1901, 2 K. B., at 549).

79. What Kinds of Sewers are Included?—Sewers vested in the local authorities under section 13 or made by them, sewers of neighbouring authorities, private sewers (in each case fecal sewers being for all sewage, slop sewers for slops only), are included under the term if only the authority is entitled to use them. So also are channels to sewage farms and land drains if the authority has a right to use them for this purpose, but you cannot and therefore need not connect with the authority's road drains. I refer to my previous lecture on "Rights" (Parts I. and III., June and August 1901, 470, Addendum).

\* \* \* Max = Maxwell on the Interpretation of Statutes, P.H.A. = Public Health Act. Lumley from henceforth = 1902 ed. (q.v.). The final addendum to Lecture as to Rights and the addendum to the present Lecture will be printed later.

80. "Entitled to Use."—This must be by vesting, by grant, or by prescription, and unless one of these is present, a mere fouling by several houses would not be sufficient (*L. N. W. R. Co. v. Runcorn*, 1898, 1 Ch. 34). Mere title to use for surface-water is not enough—*Charles v. Finchley* (23 Ch. D. 767), *Brown v. Dunstable* (1899, 2 Ch. 378). How even a natural stream may become a vested sewer may be seen in my previous lecture (Part I., June 1901, p. 377, col. 1, bottom, "Antiquity Test" of "Sewers").

81. Sufficiency of Size not Required in Sewer.—I may here note that the section says nothing that would require the sewer to be of "sufficient size" as did section 61 of the London Sewers Act of 1848 (but not its contemporary P.H.A.). I presume therefore that the small size of the sewer would take away neither our duty nor right to empty (note *j*, 1).

82. "And which is within 100 Feet."—That is to say, if it is available. There may be various obstacles, *e.g.* private alien land, or rocks, &c., or rivers, or a valley may intervene, or the place in the house where the drains would naturally emerge from the interior may be below the sewer. In such case that sewer only is within 100 feet which can practically be reached with a drain 100 feet long, and which is below the level of the drain where it makes its exit from the house.

The sewer must be an available sewer because the words of our section require this construction, the nearest available route being the proper method to adopt in measuring the 100 feet, except where inconvenience would ensue from such a construction (note, *p*, 1). Also because the spirit and intention of the section require it; and, lastly, because, even if this was not the grammatical method of construing the section, the enormous unfair, absurd, futile, and the widespread inconvenience, and also the insanitation which would result from adopting a different meaning, would force the Courts to strain a point and insert the word "available." This is shown in the appended note (*p*, 2), to which I refer the reader.

For all this, where possible it might in some cases be better to be 101 feet from the sewer than 99 feet, or *vice versa*. You might wisely choose a site higher, lower, further, or nearer, or raise or lower your drain exit or sewage founts (par. 76).

83. "Site" from which 100 Feet Measured.—In *L.C.C. v. Pryor* (1896, 1 Q. B. 465) and *Lord Auckland v. Westminster* (see par. 24) the word "site" is held to mean the ground appurtenant, and the same meaning is given in Johnson's dictionary. In *Blashill v. Chambers* (14 Q. B. 479) the word was held to mean only the plan of the house itself, and this is the meaning the word would obviously bear in the Housing of the Working Classes Acts.

This, I think, is the construction the word

should have in our section, viz. ground plan of house.

One has only to read this section to see the absurdity of making "site" include appurtenances so as to force a man with large grounds to make a drain of perhaps many hundred feet from his house to a sewer. If, however, the sewer is within 100 feet of "some part of the site" and is available, we must use it.

I have already stated what is and what is not "part of the house" (pars. 19-21, and summary par. 22).

84. Cesspools and Other Places.—So much, then, for sewers. If the sewer is not available or within the prescribed distance, then we may drain into "such covered cesspool or other place not being under any house as the urban authority may direct."

As to this, we ask nine questions: (1) What is a "house," and what buildings are part of it, so that a cesspool cannot be put under them? This has already been answered at the beginning of this lecture. (2) What is a cesspool, and how distinguished from a sewer? The answer to this may be gathered from my last lecture on "Rights," Part I., June 1901, "Sewer Destination Test," and see further *Button v. Tottenham* (78 L. T. [N.S.] 478). Seven remaining questions must be considered at greater length, viz. (3) What is "any other place"? (4) Can the authority raise the level of your house by prescribing a destination above it? (5) Can they prescribe a destination at an unreasonable distance? (6) Must they prescribe within reasonable time? (7) Who prescribes, and is a surveyor's report necessary? (8) Suppose the prescription leads to actual nuisance? (9) Does all the law laid down above as to "discretions" apply?

As to (3) "any other place" does not perhaps include the sea, for the sea was expressly inserted as a destination in the P.H.A. of 1848, and is here left out (note *j*, 1) (*contra* Lumley, ed. 1902, p. 61 [e]), nor is it *ejusdem generis* with cesspool or sewer. Any other legal destination, as given in my last lecture, may be prescribed. (A furrow or hole in a field can be prescribed as *ejusdem generis* with "cesspool" or "sewer.")

(4) The authority cannot use their power of prescribing cesspools or other places with the object of forcing you to raise the level of your basement or of the place where the drains emerge or of sewage founts (sink, &c.), for to do this would be to exercise an irrelevant discretion (par. 54), but if their motive is to secure better sanitation—*e.g.* if you lived in a hollow and any low destination would be too near in their opinion—you could not question it (compare *Matthews v. Strachan*, par. 75).

(5) I can find no law which cuts down the discretion of the authority in respect of the distance of the cesspool, except the general rules

as to honesty, relevance, &c., which I detailed when I considered structural orders above. The section, however, seems to desire to save the drain owner the expense of a drain longer than 100 ft. Cases as to by-laws are not in point except as against us, for by-laws have to pass a test of reasonableness on the merits, which orders escape.

It is no good blinking the fact that in this "free country" there are many small tyrants. Just as while boasting (we, at least, used to boast) of our small National Debt, we take no notice of the weight of local debt, which is yearly growing bigger, so a people who will not tolerate central oppressors will allow almost any latitude to local autocrats. This is not the fault of the Judges. When the law is a "hass," it is always the people who make it so.

(6) The destination can only be prescribed within a reasonable time (par. 63).

(7) The power to prescribe can only be exercised by the Council or Committee, except where these ratify a previous prescription by the surveyor. The orders as to destination can be delivered by any agent. No surveyor's report is mentioned, but as from the necessity of the case they must delegate their duty to investigate, and as there must be investigations, a report by some trusted person is necessary (pars. 57-62).

(8) The prescription must not lead to actual nuisance (par. 64).

(9) It must, in fact, generally follow the law as to discretions laid down above (pars. 50-65; see summary in par. 65), except that there is no surveyor's report expressly required (contrast par. 43).

**85. Penalty.**—Only the person who builds or orders building is liable to a penalty (par. 34). To occupy is not to cause to erect (*Pearson v. Kingston-on-Hull*, 35 L. J., M.C., 36; 3 H. & C., 921; Max. 474r.; see par. 39). Occupiers are liable to indictment. (As to all this see pars. 5, 38, 39.) (As to entry to inspect, see par. 49.)

**86. Cost of Drains, Sewers, and Cesspools.**—As to the drain, the building owner pays (Max. 492a). The cost of sewers is fully dealt with in the addenda to my last lecture, and is alluded to again in this. Here we presuppose sewers already made. Glen holds that the drain-owner is not forced to make the cesspool.

**87. Final Remarks as to the Penal Method.**—This closes our consideration as to the penal method. My object is in no way to help owners to evade the law, but rather to point out publicly defects in the Act both for and against building owners, so that these defects may be remedied (some general rules for interpreting statutes are given in note j).

#### Subsequent Alteration Method. S. 23.

**88.**—We now come to the second method, viz., that of subsequent alteration under section 23.

As to this I will say little, because the architect is not so interested in the house after it has been erected, and also because most of the questions arising under section 23 will be found to have been answered in our investigations as to section 25.

The 23rd section gives an authority, *urban or rural*, the power, where the drains of any house (already built) are really insufficient, to give reasonable notice to its owner to make certain drains. The provisions as to the destination and structure of these are, except that their order is inverted, identically the same as those contained in section 25. In the event of the notice not being complied with the authority have power to do the work themselves and to recover the expenses of so doing as laid down in the section.

On the other hand, it is provided in the third clause that the local authority may take an alternative course and, when there are two or more houses with insufficient drains, and in their opinion it will save expense to do so, may make a new sewer at the expense of the owners.

The first two clauses of section 23 should, I think, be read as if they were one section, and the third as if it was another. In accordance with this view I will set out first of all the first two paragraphs, and when I have considered them I will set out the third. The subject will thus divide itself into two broad heads: (1) Drains, (2) Sewer. (The words in which this section differs from section 25 are indicated by italics.)

**89. Drains.**—Section 23 (First two clauses) "*Where any house within the district of a local authority is without a drain sufficient for effectual drainage, the local authority shall by written notice require the owner or occupier of such house, within a reasonable time therein specified, to make a covered drain or drains emptying into any sewer which the local authority are entitled to use, and which is not more than 100 feet from the site of such house; but if no such means of drainage are within that distance, then emptying into such covered cesspool or other place not being under any house as the local authority direct; and the local authority may require any such drain or drains to be of such materials and size, and to be laid at such level, and with such fall as on the report of their surveyor may seem to them to be necessary.*"

"*If such notice is not complied with, the local authority may, after the expiration of the time specified in the notice, do the work required, and may recover in a summary manner the expenses incurred by them in so doing from the owner, or may by order declare the same to be private improvement expenses.*"

(The rest of the section appears in par. 100 later.)

On these two paragraphs of the section various questions arise. (i) Does the section apply?

What is the meaning of "house" (par. 90) and what is an "insufficient drain"? (par. 90). (ii) What may be required? (par. 91). (iii) Who can give orders? What are their powers and their discretion? (par. 92). (iv) What remedies have they against us? (pars. 93 and 94). (v) What remedy have we against them? (par. 95). (vi) Who is liable? (par. 96). (vii) When is their remedy barred by delay? (par. 97). (viii) Generally, what defences have we? (par. 98). (ix) What appeal is there? (par. 99).

90. *Does the Section Apply?*—"House."—This word in section 23 means a house when built, otherwise the definitions given in pars. 4, 5, and 17 end, apply here. It is no excuse for insufficient drains that the house was built before 1875. The house is liable before occupation and until it is really clear that all intention of using it as a house is abandoned. There is no hardship in this; a man builds and leaves a house standing and in repair with a view to its being dwelt in, and it would be best that its drains should be reformed before it is occupied, or at least while there is no tenant there. (*See Robertson v. King*, 1901, 2 K.B. 265, on general grounds).

"Local Authority."—Observe that the section applies in a rural district as well as in an urban, and see section 232 as to rural rates.

"Sufficient drain."—The drain must be insufficient in itself, *i.e.* not properly repaired, or of poor materials, or of a bad shape, or wrong size, or improper level and fall; and in criticising it no regard must be had to the sewerage system of the district generally. (*St. Martin v. Ward*, 1897, 1 Q.B. 40; 66 L.J. Q.B. 97; *V. St. Marylebone v. Viret*, 34 L.J. M.C. at 219). This last case tells us that the magistrate can review the board's decision, whether it is on a matter of law or a matter of fact. (Both cases were decided on the Metropolis Management Act of 1855, section 73.)

91. *What may be Required.*—If the section applies, the local authority has the same powers as regards structure and destination as it has under section 25 in the case of houses under that section. The owner may also, in a friendly way, get the local authority to do the work and charge him. The expenses so incurred are enforceable in the same way as if a notice had been disobeyed.

92. *Who can give Orders? Their Powers and their Discretion.*—We have seen that a local authority, urban or rural, can give orders. A perusal of par. 61 will show that, in an urban district, a committee can exercise this function. A rural council has no such power to delegate.

As regards the powers and discretion of the local authority I may refer to pars. 51-64, except par. 63 (as to punctuality).

In this section the authority are given discretionary powers to require certain structural

characteristics in the new drains; and, the sewer being beyond a certain distance from the site of the house, to prescribe likewise the destination of the drain. These last two matters are under similar rules in this and in the 25th section. In addition to this, the authority are given power to do the work required in default of the owner. Such work must be properly within their powers, but they judge as to what it should cost. They can choose whether they will recover the expenses of so doing summarily or will declare them private improvement expenses. Their other powers under the third clause of our section I deal with below (par. 100-107).

On the other hand they are tied in two ways. They cannot refuse to exercise some of their powers. Thus they must give notice to the owner when a drain is insufficient. They are not bound under this section to do the work and charge it against the defaulter. But under section 40 they must see that the drains are satisfactory somehow, or be liable under section 299, &c. (See last lecture "Complaints of Insufficient Sewers," *mutatis mutandis*.)

The authority are restricted in our favour also. It is not theirs to judge of the insufficiency of our drain, or whether we have complied with their notice, or whether it allowed reasonable time for our compliance, or whether their work was reasonable as to what was done, though they judge whether it was reasonable as to what was paid. Except as just stated, the magistrate decides as to all these matters. Further, their discretion is limited by the general rules laid down in pars. 51-62 and 64, except that punctuality does not matter.

The authority cannot prescribe a destination for a drain when there is a sewer within the 100 feet, unless they do so under the third clause of this section which we shall discuss later.

93. *Conditions precedent to Authority's Remedies*—The conditions precedent to the authority having any remedy are, that they shall give reasonably long notice, and then, in default of his compliance, do the work for the owner.

*Notice reasonably long and sufficiently explicit and proper.*—This is a condition precedent (*Jarrow v. Kennedy*, L.R. 6 Q.B. 128), but may be served on owner and occupier. A notice giving three days in which to do the work was held not reasonable in *St. Leonards v. Holmes* (50 J.P. 132, 134). The notice may simply refer the recipient to the surveyor's office for instructions. (*Bailey v. W.* 33 L.J. M.C. 161.) Sections 266 and 267 deal with notices by local authorities. We consider in the next paragraph what works may be specified.

*Doing what work?*—On the expiration of the notice the authority can do the work for the defaulter. The work that they do must of course be that specified in the notice. What work can

they specify? This question is not so easily answered.

In *V. St. Martin's v. Ward* (1897, 1 Q.B. 40, 66 L.J. Q.B. 97), the authority, purporting to act under the Metropolis Management Act of 1853, section 73, had made a new sewerage system, and made drains to it from a house the original drains of which had previously emptied into another sewer. It was held that they had travelled beyond their powers in doing this, although the old drains had been insufficient in themselves; and that the section gave the authority no power to alter the destination of a drain which emptied into a sewer. Now that section gives some colour to an opposite opinion; but the first two clauses of ours give none (with the third I deal later).

So that, *a fortiori*, under the first two clauses above set out (par. 89) the authority cannot alter the destination of our drain from one sewer to another where the original sewer is within 100 feet of the house. Nor can they, I think, do so when it is beyond that distance, as this is not within the spirit of the first two clauses, and the third clause (set out later) gives such a power only if it will save cost to the owners, and shows therefore that it cannot otherwise be exercised.

The case of *Glasgow v. McOmish* (1898, A.C. 432) shows that the authority cannot make a new drain even to the same sewer (*i.e.* to a different part of it) on a different site.

We learn, therefore, that, where the drain previously emptied into a sewer, the authority, except as mentioned below (par. 100), cannot alter the destination from one sewer to another or recover for work which is not on the same site as the old drain. If they alter the level and fall, it must not be in order to accommodate the sewer-drained conduit to a new destination.

The authority can, however, alter the destination of insufficient drains which are not already connected with a sewer, so as to make them empty either into a sewer, where there is one within 100 feet, or into some other destination (as provided by the section) where there is not, and in doing this they might have to alter the site of the drain.

Even if the authority exceed their powers in what work they require in the notice and in what they do on behalf of the owner, they can recover *pro tanto* (without costs) for any work which they were authorised to require and do (*Glasgow v. McOmish*) if their good and bad requirements are separable (see *ante*). The justice of the peace is judge as to all these matters.

94. Remedies of Authority.—The authority can take one of four alternative courses—they can recover in lump or instalments (either summarily or in county court, according to amount), or by private improvement rentcharge, or as private

improvement rates. In addition to this they have a charge on the property improved, and this remedy is cumulative, that is, can be exercised in addition to any of the others.

A valuable case on this subject, when corrected by *Gould v. Bacup* as mentioned below, is *Tottenham Local Board v. Rowell* (15 Ch. D. 371), a case which should be valuable, since the Judges took twenty years to decide it.

(i.) *Lump expenses recovered summarily*.—If any work answers to the description above laid down, sections 23 and 257 give the authority the right to recover summarily against the owner, but not against the occupier, the expenses of doing it, with interest, on service of a demand. The magistrate cannot discuss the reasonableness of amounts paid or incurred on work authorised by the section (*Baylis v. Wilkinson*, 33 L. J., M. C. 16, on P.H.A. 1848; *Beckenham v. M.B.W.*, 6 Q.B.D. 112). This procedure is civil and not criminal (*Marwell*, 370 c.; *R. v. Whitchurch*, 7 Q.B.D. 534; *Mellor v. Denham*, 5 Q.B.D. 467), and no penalty is implied (Max. 499 d., 378 c.).

This right is lost if proceedings are not taken within six months from the demand, but there is no time limit for the demand itself; it may be delayed indefinitely so far as section 257 is concerned (*Wortley v. V. St. Mary, Islington*, 51 J.P. 167); as to costs, &c., see *Walthamstow* case, reported *Times*, 18 July 1890.

*Expenses under £50 in County Court*.—Under section 261 the local authority have the option of going to the County Court in this case. The six months' limitation and other rules as to summary recovery, *mutatis mutandis*, apply here also.

(ii.) *Instalments*.—Instead of recovering a lump sum against the owner, it may be made payable by instalments with interest, under section 257. In this case the local authority has a right to demand any instalment from owner or occupier, and to recover it summarily within six months of demand. The authority cannot, when they have elected to take instalments, retract their long-suffering, and the charge is good for the instalments only as they arise.

*Gould v. Bacup* (1881, 50 L. J., Q.B. 44), in flat contradiction to *Tottenham Local Board v. Rowell* (1880, 15 Ch.D. 394) (on section 146 of the P.H.A. 1848), which case it does not quote or overrule, states that the instalments could not be recovered summarily if declared to be private improvement expenses. Certainly section 257 never couples the words "private improvement expenses" with instalments; so I venture to agree with *Gould v. Bacup*.

"Demands" under £50 can be recovered in the County Court under section 261, and as each instalment needs a fresh demand, it is the instalment and not the total expenses which must not exceed £50.

(iii.) *Private improvements and rentcharge under*

section 240.—This enables the authority to borrow from a third party the money to do the work, and, after declaring the expenses to be private improvement expenses, as permitted by section 23, to grant the lender a rentcharge on the property so improved, according to the formalities stated in sections 240 and 241.

(iv.) *Private improvement rate*, under section 213 (see sections 214 and 215). (Rural districts are in the same position as urban districts under section 232.)—Under section 213, as soon as the authority has made an order declaring the expenses private improvement expenses, they may come upon the occupier, or, if the premises are unoccupied, upon the owner.

Section 214 indirectly throws part of these rates on the owner. Section 256 gives the machinery for the recovery of rates. The time limitation in occupier's favour begins to run from the time when demand is made on him (*Tottenham Local Board v. Rowell*), and procedure is under Jervis's Acts (see later as to Appeals).

(v.) *Charge*.—This remedy is cumulative on—i.e., in addition to—each of the other remedies. Immediately the work is complete the proper expenses become a charge on the property under section 257. This charge may and must be enforced in a law court which dispenses equity, like any other charge, and is subject to no limitation, except that it is statute-barred after twelve years (*Tottenham Local Board v. Rowell*; *Hornsey v. Monarch*, 24 Q.B.D. 1). It is not registrable as a land charge (*R. v. Vice Reg.*, *ibid.* 178) and has no priority to restrictive covenants (*Tendring v. Downton*, 1891, 3 Ch. 265).

*Forcible entry*.—I may here mention, among the remedies, that the local authority may, perhaps, enter forcibly to connect drain and sewer without being liable (*Searle v. Bennett*, *Times*, 1877, 1 Dec.).

*No other remedy*.—Apart from these there is no other remedy (*V. St. Pancras v. Batterbury*, 26 L.J., C.P., 243; *Lampugh v. Norton*, 22 Q.B.D. 452, 456; *Re Boor*, 40 Ch.D. 572, 576; which says that such expenses are not recoverable in an administration action (*West v. Downham*, 14 Ch.D. 111). No penalty is implied by section 23 (Max. 499 (d); 378 (c)).

*Sections 25 and 23, cumulative*.—It seems to me, having reference to the cases of *Hall v. Nixon*, and *Pearson v. Kingston-on-Hull*, that, though a man disobeys section 25 and is fined, the local authority can also make his drains sufficient under this section, if they really are "insufficient." Otherwise section 25 would ruin the sanitation of a town instead of securing it.

95. *What Remedies against the Authority?*—If the authority makes the owner do what is really their work, he can recover his expenditure. Again, if they contract to do his work in rectifying an insufficient drain and do him damage, he can recover

(*Hall v. Batley*, 47 L.J., Q.B. 148) under section 276. Again, he might recover compensation in an appeal to the Local Government Board. He cannot, perhaps, sue, if they enter forcibly to connect sewer and drain (*Searle v. Bennett*).

96. *Who Liable?*—Lump Expenses (section 257) recovered against the owner; Instalments against the owner or occupier (section 257) at the option of the authority; but they must elect which of these they will summon for the particular instalment, and thereupon the other will be relieved for that instalment.

The fact that these lump expenses or instalments are being demanded in the County Court will make no difference.

Private improvement rentcharges are recoverable against owner or occupier (sections 240, 241, and Schedule IV.); but private improvement rates (sections 213, 214, and 215) fall only on the occupier, except that when the house is unoccupied the owner is liable.

Under section 240, as regards private improvement rentcharges, and section 214, as regards private improvement rates, the occupier can deduct three-quarters of what he has had to pay from his rent, if he holds at a rack rent, and a less proportion, if he holds at less than a rack rent. Other complications, where the land is sublet, may be seen in the section.

When not the owner but the occupier is morally responsible for the bad state of the drains, the owner could recover from the occupier (see Lumley, P.H.A. latest ed., p. 239, in note (g)).

The lease may throw all the burden either on landlord or tenant (section 226) (see Lumley, p. 138 (l), on section 104 and on section 226).

97. *Limitations*.—As regards lump expenses or instalments before magistrates or in County Court. Where the local authority has incurred expenses, they may make their demand at any time after so doing; but, when they have made their demand, they must sue within six months or they are barred.

*Private improvement rentcharges*.—Arrears of these are barred in six years of their respectively becoming due, and if no rent be paid or sued for within twelve years, all future rights to rent are barred. Of course, acknowledgment of indebtedness, &c., will prevent the claim from being barred. (As to arrears, see 21 Jac. I., c. 16, s. 3, and 9 Geo. IV. c. 14, s. 1. As to future rents, see An Act for the Limitation of Actions and Suits relating to Real Property, 1833, 3 & 4 Will. IV. c. 27, s. 2, amended by 37 & 38 Vict. c. 57, s. 9, of 1874, and see section 14 of the 1833 Act.)

*Private improvement rates*.—Under section 252 P.H.A. these are barred in six months from the time of the defaults mentioned in section 256 P.H.A., i.e. non-payment after fourteen days from demand in writing, or, if defendant is "flitting," immediately on demand. (Section 256 is identical

with section 11 of the Summary Jurisdiction Act, which is unrepealed.)

*Charge.*—The charge under section 257 is barred in twelve years like rentcharge.

The case of *Smith v. Legg* is not in point.

98. Defences (defences; pars. 121, 131, 135, relate to "nuisances").—The defences of the person whose drains are thus criticised will be:—  
(i) The section does not apply, for the building is not a house, and the drain is sufficient (par. 90).  
(ii) The requirements as to the new drain are in excess of the authority's powers (par. 91) as to number, size, materials, level, fall, and destination, and the standard of necessity for effectual drainage is wrong. The discretion of the council has been exercised wrongly (*see* pars. 61–64, *ante*, except par. 63.) The wrong persons have given the orders (par. 93.) (iii) The notice given was unreasonably short, and did not state what was required (par. 93, sub-par. 2). (iv) The notice was to do work, not making the old system effective, but making a *totally* new system; my drains previously emptied into a sewer, and the authority told me to put the drains on a new site or to empty them into a new sewer (par. 91) (not under the proviso). (As to proviso, *see* later, par. 100.) (v) The notice was complied with. (vi) The authority did work resembling the above notice in being outside their powers. The authority did work not mentioned in their notice. The authority *dishonestly* paid an unreasonable sum to the contractor, &c. (vii) The sum is not below the £50 and so cannot be recovered in the County Court (par. 94, sub-par. 5). (Other objections to jurisdiction might be made, and bias of magistrate *might* be pleaded in very extreme cases in order to disqualify him.) (viii) Instalments having been ordered, the lump cannot be recovered (par. 94, sub-par. 6). Private improvement expenses having been ordered, these can only be recovered under rentcharge or as rates. Only one of these four methods of procedure can be taken (par. 94, sub-pars. 8 and 9). The action is too soon, no demand having been made (the charge is independent of demand). (ix) The wrong person, owner for occupier, or *vice versa*, is being sued (pars. 96, 94, sub-par. 11). (x) The High Court has no jurisdiction (except on case stated). (xi) The action is too late, for the time limit has passed (par. 97). (xii) A *bad* defence would be that our house was built before 1875. (xiii) Failing all these, sometimes contradictory and sometimes inapplicable defences, the victim might appeal (par. 99).

99. Appeals.—These will be as follows:—

*From authority to magistrate.*—I have already stated these (pars. 91 and 92). The magistrate can also consider the rate (*see* Lumley on section 256 P.H.A.).

*From authority or magistrate to Local Government Board*, under section 268, within twenty-one days from summons as to lump expenses, instal-

ments, rentcharge, rate, and charge. Compensation may be awarded and proceedings stayed.

*From authority to Equity Court*, in the case of a charge under section 257.

*From magistrate to Quarter Sessions.*—As regards expenses or magistrate's order, the appeal is under the Summary Jurisdiction Acts (which repeal most of the formalities, &c., stated in section 269, except as regards rates). Therefore notice of appeal must be given within seven days, and recognisances entered into within three days after notice.

As regards rates the provisions of section 269 remain good, and so fourteen days are allowed in which to give notice of appeal.

*From magistrate or from Quarter Sessions to High Court* by case stated. If from J.P., three calendar months only allowed (and *see* Stone's *Justices' Manual*).

*From High Court (Q.B.) to Superior Courts*, only if leave to appeal is given.

In all cases care must be taken to make clear the appellant's grounds of objection.

As regards apportionment of expenses of making a sewer under the proviso, we deal with this under "Sewer" (pars. 100–107).

100. Sewer.—Proviso = Clause 3 of section 23: "Provided that" (*understand here* "where two or more houses within the district . . . are without drains sufficient," &c.) "where, in the opinion of the local authority, greater expense would be incurred in causing the drains of" (*understand* "such") "two or more houses to empty into an existing sewer pursuant to this section, than in constructing a new sewer and causing such drains to empty therein, the local authority may construct such new sewer,

"and require the owners or occupiers of such houses to cause their drains to empty therein,

"and may apportion as they deem just the expenses of the construction of such new sewer among the owners of the several houses, and recover in a summary manner the sums apportioned from such owners, or may by order declare the same to be private improvement expenses."

I have divided this proviso into three paragraphs, and will consider, to begin with, the first and last paragraphs, which relate to this "Sewer," and then consider what is to be done as to the drains into it under the middle paragraph.

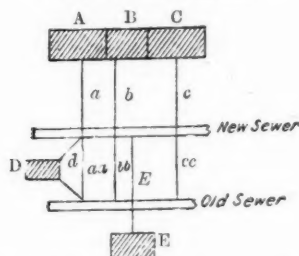
I now consider the questions: (i) When does this part of the section apply? (ii) Must each house so affected be saved expense? (iii) What are the authority's powers and discretions? (iv) What are their remedies and who are liable? (v) Appeals. (vi) Limitations. (vii) Can the owners be forced to make drains to the new sewer under the first two clauses of this section (set out in par. 89)?

101. Does this Part of the Section apply?—This part of the section only applies to houses which are

under the first clause, *i.e.* which have insufficient drains. It would be monstrous to hold otherwise.

**102. Must each House so Affected be Saved Expense as to Drains?**—The object of allowing the authority to make a sewer at the expense of the house is evidently not to allow the authority to add to or to alter the site of house drains, which emptied into the old sewer, but rather to shorten them (as in the diagram).

SUBSEQUENT ALTERATION, S. 23. NEW SEWER TO SAVE EXPENSE UNDER PROVISIO.



*a, b, c, A's, B's, and C's drains as cut down. aa, bb, cc, abolished continuation of same drain. d, D's new drain. E = new continuation of E's old drain.*

The diagram shows also E's house, which drained, say, 20 feet into the old sewer, and on its abolition has to drain 60 feet into the new. E's old drain is, we will suppose, "insufficient," but, while the drains *a, b, and c* from the other houses will cost less, being shortened by one-half, the drain from E's house will cost more. Can the authority make E pay for the new sewer, and at his own expense lengthen his drain? Certainly not. The authority have no more right to consider the saving to the other houses in dealing with E than they have to consider the general saving to the rest of the town. Both are irrelevant considerations, and to consider them would be to violate the rules as to discretions laid down earlier in the lecture (pars. 51-64). But had E's drain been shortened by a foot instead of lengthened, then he would have had to pay a moderate proportion of the cost of the new sewer. The same remarks apply to D's new drain.

**103. Powers and Discretions.**—I have already considered these in the last paragraph. The discretion to make the sewer and also the discretion to apportion the expenses, must conform to the rules laid down in the pars. last mentioned.

**104. Remedies.**—The remedies for the apportioned expenses are the same as those for the expenses of making drains, and the owners <sup>and</sup> or occupiers can be made liable by the same methods. No notice of default is required as in the case of making drains.

**105. Appeals.**—The appeals are the same, but, when the appeal is not as to right to charge at all but as to amount apportioned, a notice disputing

it must be served on the authority within three months.

**106. Limitations.**—These also are the same as those with regard to recovering expenses of drains.

**107. Can the Owners (or Occupiers) be forced to make Drains to the New Sewer under the First Two Clauses of this Section?**—Clearly. The words "causing to empty" as used the first time (in sub-par. 1 of par. 100), of course, mean construct or repair, and so I think that "require to . . . cause . . . to empty" (in the second sub-par.) gives the authority power to require them to construct or repair, and, by reference, enables them to use all the powers given in the first part of this section, set out earlier (par. 89), in order to enforce this.

*Inspecting and repairing* is dealt with by section 41.

This concludes my remarks as to the subsequent alteration method. We will now consider nuisances.

### 103. Nuisance: Method.

The question of nuisances by pollution of water has already been dealt with in my lecture on "Rights as to Sewers" (Part I., June 1901, p. 369, col. 2). What I now propose to consider is liability for pollution of air. Nuisances of this kind may be punished statutorily under the Public Health Act (pars. 109-126) and kindred enactments, or at common law as a public (par. 127-131) or private nuisance (pars. 132-136).

A nuisance is punishable, even though it does not arise from a house or building, but only from a field, and whether the district is urban or rural.

**109. Nuisances under the Public Health Act.**—The following schedule will, perhaps, be of use. There are three possible complainants, and the first may proceed in five alternative ways (*set out in table on next page*).

I. By local authority.

II. By aggrieved person (section 105) who has the same powers as the authority, only a constable may be ordered by the magistrate to enter instead of the local authority.

III. By a constable (section 106), if the Local Government Board consider the authority in default and authorise him to act. In this case he has all the powers of the authority.

**110. — Cumulative or Alternative.**—All these methods A, B, C, D, and E [*see table overleaf*] are alternative and not cumulative, and sections 94-98 are quite independent of sections 41, 47, and 49. The difference in the punishments above shown, and also the redundancy of fines and expenses which would otherwise result, and the absurdity of making a single penalty payable by the offender who is attacked under section 94, and double ones if under sections 41, 47, or 49, show that sections 96 and 98 are not complementary to these latter sections. Again, each set of sections is in a different part of the Act. I do not think

	Section	Procedure	Offence	Punishment	Person Liable	Authority's Power to judge whether Nuisance exists, and to Condone
A	41	Notice and summary recovery	Bad drains, &c.	10s. per day penalty and expenses	Owner (or occupier by making private improvement expenses)	If the local authority deem the offence committed they must act
or B	47 (2)	Notice and summary recovery	Stagnant water, &c. in "dwelling-house" after notice	Expenses and penalties, 40s. lump, and 5s. per day	Occupier	
or C	47 (3)	Summary recovery	Sewage soaking from w.c., privy, or cesspool	Expenses and penalties, 40s. lump, and 5s. per day	Occupier	No discretion. Must act
or D	49	Notice and summary recovery	Filth, &c.	Expenses	Offender or occupier; if no occupier, then owner	If the local authority deem the offence committed they must act
or	94	Notice or abatement	"Nuisance"	(None under this section. See (2), <i>post</i> )	Offender, or, if not found, occupier; or, if structural defect or no occupier, owner. (Occupier and owner excused if blameless.)	
E	95	Application to justices	Disobeying abatement order or probable recurrence	Lump penalty, £5, and costs	Recipient of notice	If not abated or in local authority's opinion likely to occur again, they must apply
	96	Order by justices	—	—	—	If justices satisfied as to offence they must make order and may impose penalty
	98	Second application to magistrate	Not abating or	Continuing penalty 10s. per day and expenses, if local authority abate	Recipient of notice	The authority must act (by 48 & 49 Vict. c. 72, s. 7)
—	—	His order	Disobeying prohibition	20s. per day and expenses	—	The magistrate has a judicial discretion

Schedule IV., forms A and B, contradicts this view. It only gives one pair of forms for each method of proceeding. (*Bird v. St. Mary Abbott's*, 1895, 1 Q.B. 912, may, perhaps, be useful.) Under the P.H.A., s. 111, no one is to be "punished twice" for the same offence.

This same section, with the above proviso, allows the public and private common law remedies to be employed (*see post par. 121*; Defence (5) par. 126 and sections 25 and 23 also. I propose to consider the questions which concern them all).

**111. General Matters as to Nuisances under P.H.A.**—I propose to consider what "nuisance" is and what offences are punishable, the authority's power of entry, the forms of notices and of orders to abate, the persons who will be liable, expenses, penalties, who can act, and what defences, counter-remedies, and appeals the defendant has.

**112. What is "Nuisance"?**—This question applies to all the above five methods A to E. The word does not include every common law nuisance, but a nuisance, to be punishable, need not be injurious to health. (*Bishop Auckland v. Bishop Auckland*, 10 Q.B.D. 138; *Banbury v. Page*, 8

Q.B.D. 97; *Malton v. Malton*, 1867, 4 Ex.D. 310; *Houldershaw v. Martin*, 1 T. L. R. 323; *see Lumley 76 b*, and 119.) I suppose bad drains at the seaside are healthy; for all that they are nuisances.

**113. What Offences Punishable.**—These may be seen by reference to my schedule and to the sections. Section 41 does not apply to structural defects (*Fulham v. Solomon*, 1896, 1 Q.B. 198). Nor do sections 47 (2) or 49. But sections 47 (3) and 94 do apply to these.

**114. Entry.**—(1) *To inspect nuisances.* Under section 41 (*see that section*, which applies only to method A). As to all nuisances power is given to inspect (and abate) under section 102 (and *see sections 103 and 104*). The official (he need not be the "inspector of nuisances") must, if he cannot enter by agreement, apply to a magistrate, showing reasonable cause (*Unes v. N.L.C.S.*, 63 J.P. 244). Section 103 lays down the penalty for refusing to admit the official after this order. The inspection may be either to examine whether nuisance exists, or whether an abatement or prohibition order has been carried out, or (2) *To*

abate (under the same section 102). Section 305 does not apply. Nor does section 306, for a different penalty is there laid down (see *Bird v. St. Mary Abbott's*, *ubi supra*).

Under section 92 it is the duty of the authority to inspect and abate.

Section 104 shows who are liable. (And see *post*.)

#### 115. Notice to Abate.

As to form (no notice is required under method C (section 47 (3)), and my remarks do not apply to method B (section 47 (2)) with its 24 hours' notice). The notice must specify the necessary works (see Schedule IV. Form A, of P.H.A.; *R. v. Wheatley*, 16 Q.B.D. 34; *R. v. Horrocks*, 82 L. T. [N.S.] 767; Lumley, p. 132); (*Millard v. Wastell*, 1898, 1 Q.B. 342, not *contra*, as it applies only to smoke nuisances). It must also be framed according to the facts of each case (*Wood v. Widnes*, 1898, 1 Q.B. 463; contrast *Frost v. Fulham*, 83 L.T. 720).

As to length of notice.—Under section 41 it is sufficient to require abatement "forthwith," i.e. in reasonable time (*Thomas v. Nokes*, 6 Eq. 521). Under section 47 (2) and section 49, 24 hours' notice; under section 47 (3), no notice; and under section 94, what notice the authority think fit (Max. 21 b, 285 b) must be given.

116. Form of Justices' Order to Abate.—The form of this order is found in Schedule IV., form C, of P.H.A., and in the schedules of the Summary Jurisdiction Acts; and see *Goose v. Bedford*, 21 W.R. 449. It must specify what is to be done (*R. v. Horrocks*, *ubi supra*), and it can specify any works which the magistrate considers necessary (Lumley, p. 132; *ex. p. Whitchurch*, overruled). If the magistrate specifies structural alterations, this would, I suppose, show that he is purporting not to act under sections 41, 47 (2), and 49, which do not apply to such (see par. 113). The schedule form of P.H.A. does not show under what section he acts. (For an order in which the defendant and the authority were each charged part of the expenses, see *Booth v. Owen*, 66 J.P. 357.)

117. Who Liable.—The column marked "Person liable" in my schedule (par. 109) shows this clearly. Under section 104, the costs and expenses of carrying out the powers of the Act as to nuisances are chargeable against the offender (including the owner if he is to blame). No person liable need pay more than one year's rack-rent. These payments are apportioned against the guilty parties. The money can be collected in the first instance from the occupier, who, if he is innocent, need not pay a sum exceeding the amount of the rent then due to his landlord, and can deduct that sum next rent day. All this, however, is to be subject to the terms of the lease, (as to which see *Digest of Law Reports*, 1891-1900, col. 1165 (6)).

If the occupier has been legally compelled by

law or by reasonable fear of it to do the work at his own expense and the landlord is liable, he can recover from the latter (*Gebbart v. Saunders*, 1892, 2 Q.B. 452; *Andrews v. St. Olave's*, 1898, 1 Q.B. 775; *Cree v. St. Pancras*, 1899, 1 Q.B. 693; *North v. Walthamstow*, 67 L. J., Q.B. 972). But not if he does the work quite voluntarily (*Thompson v. Hawes*, 73 L. T. 369).

The reader may refer to Lumley 127, 128. (*A.-G. v. Tod Heatley* (1897, 1 Ch. 650) decided that the owner must prevent his land from becoming a public nuisance.)

By declaring expenses (under section 41 only) to be private improvement expenses, the authority may (subject to the lease) throw liability (at least primary) on the occupier.

As between reversioner and tenant for life the corpus is liable (*Lever, in re*, 1897, 1 Ch. 32).

The architect's liability has already been considered in Lecture II. ("Rights as to Sewers") (see *Addendum*, 1902). Section 255 also bears on the question of liability.

118. Expenses.—These are recoverable like any other "expenses" in the P.H.A. (see "Subsequent Alteration," par. 94), with this difference, that nuisance expenses may also be recovered in the High Court or County Court, under section 104, which lays down no conditions to their jurisdiction. Only under section 41 (method A) can nuisance expenses be declared private improvement expenses. (As to the effect of doing this see par. 94.) In method E expenses can only be recovered on the second summons (under section 98).

119. Penalty.—A penalty (see my schedule) is recoverable under all these methods except D (section 49), and so makes the offences punished by A, B, C, and E criminal matters. The practice as to these must be sought in Lumley and in Stone. If the authority think their remedy before justices inadequate, they may proceed in the High Court; and they may proceed in the County Court (i) if the expenses (not including penalty) do not exceed £50, and (ii) provided also there are any expenses. My reasons for thus stating (i) and (ii) are that, in my opinion, a penalty is not a "demand" under section 261. Of course the same Court would try both penalty and expenses.

120. Who Can Act.—I do not profess to deal with all the complex law on this point. The authority, if it is an urban authority, can delegate their powers to a committee, under section 200, as we saw in the second part of this lecture. Except where power is by the Act expressly given to an official, he must not act on his own initiative (Lumley 126 on section 94).

The five methods vary in the powers they give to officials. Under A (section 41) the inspector can enter, examine, and report; but the local authority (acting on his report or not, as they please) give the notice (doubtless through their clerk). In

sections 47 and 94 (methods B, C, and E) no mention is made of any official; while in section 49 (D) the inspector seems to have matters entirely in his own hands. In section 102, which gives right of entry, the local authority or any officer has power to apply to the magistrate.

We deal later (par. 121) with "aggrieved persons," and constables acting under sections 105 and 106, to see how far the law laid down, *ante* and *post*, applies to them.

Now we come to your Defences. (Counter-remedies, and Appeals against the authority and others, are dealt with in subsequent paragraphs.)

**121. Defences.**—(Pars. 131 and 135, though referring to common law, might be referred to.) (1) *Local authority to blame*, in that they supplied insufficient sewers. You must prove that they were in default, and that this default caused the nuisance. (*Ainley v. Kirkheaton*, 1891, 60 L. T. Ch. 734; *Brown v. Dunstable*, 1899, 2 Ch. 378; *Wycombe v. Parsons*, 1894, 2 Q.B. 780; and see *Molloy v. Gray* and *Kinson v. Poole*, quoted in my previous lecture on "Rights." See also Lumley, p. 121 and p. 129, middle.) How far this defence would avail against the aggrieved person or constable acting under sections 105 and 106 is considered later (par. 124).

(2) *Limitations*.—As to penalties, the times after which proceedings are barred may be gathered from the books; as to expenses, they appear from my remarks on "Subsequent Alteration," but I may add a few points. *As regards penalties*.—These are payable, and the time limit therefore begins to run, when the matter of complaint arises; but, if the offence continues, this would push further and further forward the date when recovery would be barred. Under section 96 (method E) the limitation time as to penalties runs from default in obeying the notice (Lumley, p. 133 g). *As regards expenses*. (Summary recovery.)—If the abatement works can be called works of private improvement, then time does not begin to run till reimbursement has been demanded. But if not, then it runs from when the expenses were incurred.

(3) *Prescription*.—If these offences are also a public nuisance (par. 131) at common law this plea is bad. At any rate, prescription to pollute air is hard to prove. In one case a man was reported to have "enjoyed" a mixture for twenty years, but he was held liable as he could not prove that he had extended the enjoyment to the plaintiffs for all that time (*Flight v. Thomas*, 10 A. and E. 590; 8 L. J., Q.B. 387). So you see that, whether we are too generous or too stingy with our odours, we shall fail.

(4) *Abatement by defendant would cause trespass*.—As to how far this defence will avail, see Lumley, p. 130, quoting *Parker v. Inge* and *Letterkenny v. Collins*.

(5) *Offence already punished*.—This would be

to plead section 111, but the punishment must be of the same class. The offender might have to suffer expenses, damages (by private plaintiff), injunction, and either indictment or penalty. The principle is shown in *Hall v. Nixon*, L. R. 10 Q.B. 152. (There is no appeal against acquittal, see later.) I do not think that double expenses or a double penalty could be recovered by proceeding against him by the penal and subsequent alternative methods.

(6) *The foul odour by itself would not be a nuisance*.—This is no defence (*Barnes v. Norris*, 41 J.P. 150), any more than it would be in private actions or public indictments (*q.v.* later pars. 131 and 134).

(7) It will be no defence that the place from which the drain proceeds is not a house or building.

**122. Remedies Against the Local Authority.**—This is to carry the war into the enemy's own country. You may punish the authority (i) for taking unjustifiable proceedings; (ii) for misfeasances. As to (i), *Barnett v. Eccles*, 1900, 2 Q.B. 423, may be referred to. The Local Government Board, on appeal under section 268, which applies to all five methods of proceeding for nuisances, may award compensation. Further, where any proceedings had no ground, the magistrate would acquit with costs. Add to this that, in any case, if the authority forced you to do their duty, you could recover. (As to the amount of compulsion, see sub-par. 2 of par. 96.) We noticed in "Form of Order" that the magistrate in *Booth v. Owen* charged part of expenses to plaintiff and part to defendant. As to (ii) misfeasance—that is, actual wrongdoing and damage in disturbing your drains, &c.—you could recover damages (*Robinson v. Workington*, 1897, 1 Q.B. 619; 61 J.P. 164; *Dent v. Bournemouth*, 66 L.J. Q.B. 395); and section 41 (as to method A) requires the authority to reinstate if no nuisance is found. But no damages can be recovered against the authority for mere non-feasance, *i.e.* negligence in not supplying proper sewers (*Touzeau v. Slough*, 60 J.P. 103).

**123. Appeals.**—(i) *From local authority to magistrate*.—This is another way of saying "What discretion have the authority?" Under section 41 (see Lumley 77 k) there is no such appeal, nor is there under section 49; but the authority are not irresponsible under section 47, nor (in method E) under section 96, for they must prove the facts. Again, under section 102, as to entry to inspect or abate, the magistrate is the judge. The authority has discretion, as to length of notice to abate, only under section 94 (method E). (See last sub-par. of par. 115.) Even when the authority have a discretion, they must exercise it according to the rules laid down earlier in this lecture.

(ii) *From authority to Local Government Board*, under section 268.—There is an appeal as to all five methods.

(iii) *From magistrate to Quarter Sessions, under section 269.*—The practice was dealt with when I discussed "Subsequent Alteration." (See also Lumley, 397 &c.). Under section 99 proceedings are stayed pending the appeal.

(iv) and (v) *From magistrate or Quarter Sessions to High Court, on case stated* (see section 269).

(vi) *From High Court* there is an appeal under method D (section 49) (only by leave); but under none of the others, since they are all criminal processes.

For this same reason the complainant cannot appeal against acquittal. (*R. v. London J.J.* 25 Q.B.D. 357.)

**124. Aggrieved Persons and Constables under Sections 105 and 106.**—Do all these remarks apply to complaints by aggrieved persons or constables? They apply to *aggrieved persons*, except that Defence No. 1 would be unavailable, since the aggrieved persons are, by section 105, given "the like" remedies. This is equivalent to incorporating, *mutatis mutandis*, all the enactments giving powers to the authority, and not to placing the aggrieved person in their shoes. As to *constables* proceeding under section 106, all the above remarks, including Defence No. 1, apply, since they can only institute proceedings "which the defaulting authority might institute." Except, then, as excepted above, all these complainants have the same powers similarly conditioned as we have seen the local authority to possess.

**125. Parish Council.**—I may add, in conclusion, that a Parish Council may, under the Local Government Act 1894, cap. 73, section 8 (1), subject to conditions, abate nuisances.

**126. Other Methods.**—All these powers of proceeding are by section 111 cumulative on other methods, provided that the defendant is not "punished twice for the same offence" (see Defence No. 5), and provided also that the facts allow it. These methods are: proceedings by indictment or injunction for *public nuisances*, and proceedings by action to obtain damages or injunction for *private nuisances* (including public ones which also specially affect private individuals). To consider public nuisances first.

**127. Public Nuisances.**—As to these I will consider what publicity and what offensiveness is required to constitute the offence, who are liable, and what defences the accused would have.

**128. Publicity.**—Nuisances to a highway (*R. v. Neil*, 1826, 2 C. & P., 485), or to a populous neighbourhood near a highway (*R. v. Papineau, Str.*), have been held to be public nuisances, but not a nuisance which affected only three houses (*R. v. Lloyd*, 1803, 4 Esp. 200).

**129. Offensiveness.**—A public nuisance includes many detractions from comfort not included in "nuisances" under the P.H.A. Thus "Charley's Aunt," having crowded the streets with an expectant audience, not necessarily offensive to the nose, was held to be a public nuisance.

For the purposes of an indictment in *R. v. Davy*, 1803 (*ubi supra*), it was held that damage to health or rendering dwellings uncomfortable must be proved, and that mere damage to furniture or discomfort caused to persons by sulphurous fumes does not constitute a public nuisance; but, in 1823, *R. v. Neil* (*ubi supra*) upset this doctrine. (See also *A.-G. v. Cleaver*, 18 Ves. 211.) In *A.-G. v. L. & N.-W. R. Co.*, 1900, 1 Q.B. 78, an information was successful though no injury was proved, since the company had infringed a statutory requirement as to level crossings. In our case the drain owner is, as we saw, forbidden by the P.H.A. to have an offensive drain. I think, therefore, that if he comes under the P.H.A. he will, if the odour is public, be liable for public nuisance.

For the purposes of a public injunction it was decided in *A.-G. v. Sheffield Gas Consumers* (3 De G. M. & G. 304), and 19 Ruling Cases (where the whole matter is discussed) p. 273, and in *A.-G. v. Cambridge Gas Consumers* (4 Ch. 71, and *R.C. ibid.*), that an injunction can only be obtained if there is a continuous injury, or if irreparable damage is threatened. On the principle stated above, damage to health or to real property need not be proved.

**130. Who liable?**—The owner or any other person can be indicted, if morally responsible, but not otherwise (*R. v. Pedley*, 3 L.J. M.C. 119, commented on in *Rich v. Basterfield*, 4 C.P. 783, at 805, and followed by *Todd v. Flight*, 9 C.B. [N.S.] 377, 389). A man may be responsible for doing acts which would naturally lead to nuisance and for, so to speak, winking at the foul odour. (See Smoke Nuisance cases, &c.)

**131. Defences.**—(Pars. 121 and 134 may be compared.) The defence that the complainant is really the guilty party would be a good defence, as in P.H.A. nuisances (par. 98).

As to the plea that the odour by itself would not be a nuisance, *R. v. Neil*, 1803 (*ubi supra*), decides that this is unavailable, though *R. v. Medley* (6 Car. and P. 292) (a later case in 1834 as to fouling water) contradicts this. Reading the two cases and remembering that there is not in our case any "bread and butter" plea (see later) as in *R. v. Medley*, I think that all contributors to the nuisance could be punished, doubtless in proportion to their offence, for otherwise the consequences to public health would be too fearful to contemplate.

There can be no plea of prescription (Lumley 49), and there is no limitation to the right to indict for public nuisances or, if they continue or recurrence is probable, to the right to obtain an injunction. The place from which nuisance arises need not be a house or building, nor would the "bread and butter" plea or any of the other

defences held inapplicable to private actions for nuisance avail here (see later, par. 134).

With private actions for public nuisances I deal in par. 133.

#### Private Actions for Private Nuisances.

132. What Injury gives Cause of Action—(i.) for damages, (ii. and iii.) for injunction?

(i) In order to obtain damages there must be some reasonable amount of damage to comfort.

According to *Scott v. Firth* (1865, L.R. 1 Ch. 66) (noise from vibration), where the "bread and butter" plea weighed in defendant's favour, as it would not in ours, plaintiff must prove real and substantial damage.

The cases of *Lilywhite v. Trimmer* (1867, 36 L.J. Ch. 525) (fouling water), and *Crump v. Lambert* (1867, 3 Eq. 409) (fouling air), decided that trifling damage was enough. In *Wood v. Waud* (1849, 3 Ex. 748), it was held that, when water was fouled, there was a cause of action for damages, though no perceptible injury had been done. The reader may refer to *Walter v. Selfe* (20 L.J. Ch. 453) (a brickburning case), and to *J. Lyons v. Wilkins* (1899, 1 Ch. 225).

On the whole, then, I think that some reasonable amount of damage must be shown where the plaintiff seeks damages for pollution of air by bad drains; but that, on the analogy of public and P.H.A. nuisances, injury to health need not be proved.

(ii) To obtain an injunction when there is present nuisance, I think that if the foul drain is a P.H.A. nuisance or likely to become chronic, such an injunction can be obtained. It was held that the infringement of a statute was, without proof of damage, sufficient cause for injunction in *A.-G. v. Cockermouth* (1875, 18 Eq. 172) (water), and, even where private water rights only were infringed, it was held in *Crossley v. Lightowler* (1867, 2 Ch. 478), that no damages need be proved, since there was probable damage, viz. the danger that defendant would obtain a prescriptive right.

Failing these pleas for plaintiff, he can succeed by proving damage to either property or person (in spite of *St. Helens S.C. v. Tipping*, L. R. 1 Ch. 66) as regards either health or comfort (see ante); but such damage must be more than trifling. (*Lilywhite v. Trimmer* (ubi supra) 1867 (fouling water). *Crump v. Lambert* (ubi supra) 1867 (fouling air). *A.-G. v. Gee*, 1870, 10 Eq. 181 (fouling water). *Fletcher v. Bealey*, 28 Ch. D. 688 (fouling air). *Ridge v. M. R. Co.*, 1888, 53 J.P. 55 (fouling air or water).)

(iii) To obtain an injunction where no present damage. This is called a "*quia timet*," and *Crump v. Lambert* (ubi supra) and *Nixon v. Tynemouth* (1888, 52 J.P. 504) may be referred to.

#### Private Actions for Public Nuisances.

133.—These may be taken by the local authority

(*A.-G. v. Logan*, 1891, 2 Q.B. 100) or by individuals. The plaintiff must prove particular, direct, and substantial damage, either to person or property (*Benjamin v. Storr*, 19 Ruling Cases, 263, 269); (and see *Max*, 568-583, and *Lumley* on section 111 P.H.A.).

#### Further Questions as to Private Actions for Private or Public Nuisances.

134. Who Liable?—Primarily the occupier. *Russell v. Shenton* (11 L.J. Q.B. 289) (non-repair of sewers).

135. Defences.—(Pars. 121-131 may be compared.) In addition to defence of no nuisance, and that defendant not the guilty party, and to technical defences, the defendant may plead:—

(1) That the odour, apart from odours occasioned by others, is not a nuisance. This is a bad defence (unless the co-operative odour springs from a joint receptacle which is a "sewer"), for the bad smell might be the "last straw" (*Crossley v. Lightowler*, 1867, ubi supra) (fouling water), and to hold otherwise might be to let defendant obtain a prescriptive right under cover of the others, who might cease their nuisance some day (*Wood v. Waud*, 1849, ubi supra) (fouling water). (I do not quite see the force of this argument, at least as applied to our case.) So held in *Walter v. Selfe* (1851, ubi supra) (brickburning); *Crump v. Lambert* (1867, ubi supra) (fouling air); *A.-G. v. Leeds* (1870, 5 Ch. 583) (fouling water); *Blair v. Deakin* (1887 [W.N.] 148, 57 L.T. [N.S.] 522); *Lumley*, p. 50 (as to fouling water).

(2) Prescription may be a good defence (*Wood v. Waud*, ubi supra). But could it be proved? (See ante, par. 98, same defence as to P.H.A. nuisances.) If the extent is too limited, then the prescription might be so limited as not to bar the plaintiff; if too extensive, the nuisance might be a public nuisance and prescription impossible even, I think, as against private individuals. But who would desire to endure a lifelong smell in order to force it on others?

(3) All reasonable care to avoid nuisance. This is no defence if there is in fact a nuisance (*Napier*, 1893, 2 Ch. 588).

(4) That defendant came to the nuisance and not the nuisance to him. As to this see *St. Helens v. Tipping* (ubi supra). It is, I think, no defence.

(5) Nuisance ceased before writ or before trial. This is a good defence to an action for an injunction, but not to an action for damages (*Carr v. Bath*, and *Dunning v. Grosvenor*, 1900 [W.N.] 265); but costs might be payable.

(6) The "bread and butter" plea is inapplicable, for the smell of a household drain is not a necessary concomitant of trade, like the odours from a tanyard.

136. Private Abatement.—This may be allowed, subject to the question of trespass (see *Lane v. Capsey*, 1891, 3 Ch. 411); and *Scarborough v.*

*Scarborough; Parker v. Inge; Letterkenny v. Collins*, cited in Lumley, p. 130).

137. **Cost of Sewers.**—Is dealt with in my previous lecture (Pt. I., June 1901, p. 380, note (s)) as revised by *addendum* to it of 1902 (*post*), and par. 100.

138. **By-laws, Local Acts, and the P.H.A. Amendment Act.**—The reader is again reminded that almost all the law above laid down may be modified by by-laws or Local Acts, by the P.H.A. Amendment Act 1890 where it is adopted, and that none of my remarks apply to London.

139. **Conclusion.**—Thus we see that for the man who neglects his drains the P.H.A. and the common law alike have prepared pitfalls, viz. the penal method where, in an urban district, the house-drain (good or bad) is not authorised; the subsequent alteration method where in *any* district it is insufficient; and the nuisance method where there is nuisance, whether it proceeds from house, building, or field. Many of these weapons can be used together. (How far "cumulative" see par. 94 end, pars. 110, 126.)

If I was a medical man I could expatiate on the diseases (diphtheria, typhus, typhoid, smallpox, cholera, and lack of appetite) which would ensue from a bad drain.

Lawyer and doctor alike say "Mind your drains."

NOTE.—These lectures have been revised and added to for purposes of reference as a sort of *vade mecum* for architects planning a house.

The following index, referring to pars. as to subsequent alteration and nuisances, may be useful.

Discretions, 92, 103.  
Who liable? 94 (sub-par. 11), 96, 117, 130, 134.  
Limitations, 97, 106, 121; Def. 2, 131, 135.  
Defences, 98, 121, 131, 135. (The defences do not profess to be exhaustive).  
Appeals, 99, 105, 123.  
Cumulativeness, 94 (last two sub-pars.), 110, 126, 133.

#### Notes.

(p) *Measurement of 100 feet* (par. 82).

1. Method investigated apart from the question of hardship.

Previously to 1846 the rule in every case was, to measure specified distances by the nearest available route (Max. 491; *Minge v. Earl*, Cro. Eliz. 212, and *Wing v. Earl*, *ibid.* 267), and so in Hawkins's "Pleas of the Crown," as to residence of "Papists" within ten miles of London (vol. i., c. 12, s. 16), and in *Woods v. Demott* (2 Stark, 89), and *Leigh v. Hind* (9 B. and C. 774; 7 L. J. [O.S.], K.B. 313; 4 Man. and Ry. 597), in which rival trading was restricted by contract within a certain distance, the same rule was adopted.

In 1846 this rule changed as to many matters, of which, as I shall show, ours is not one. Thus, where the statute law had enacted that, to enable a man to qualify for a poor-law settlement, he must reside within a specified distance of his estate, it was decided in *R. v. Saffron Walden* (1846, 9 Q.B. 76) that, in future, distances must be measured as the crow flies, for otherwise, since new

short cuts might at any time be made, or rivers hitherto impassable become frozen and therefore able to be crossed, a settlement might be good one day and bad the next, and this would cause great inconvenience.

This case was followed by two others, which added the further reason that to allow the method of measuring by the nearest available route would mean litigation (and witness fees for surveyors) in these cases (*Stokes v. Grissell*, 1854, 23 L. J., C.P. 141; *Lake v. Bull*, 1855, 24 L. J., Q.B. 273), therefore it was held that, when the Legislature gave County Courts jurisdiction within a specified distance, that distance was to be measured in an absolute straight line, as if the suitors could literally fly to the protection of the Court.

So again, from the same motives, where it was enacted that there should be no turnpike bar within a certain distance of a town, the distance was measured as the crow flies (*Jewell v. Stead*, 1856, 25 L. J., Q.B. 294).

Then in 1859 and 1872 came two cases, in which the Courts had again to decide how to measure distance in a contract against setting up a rival trade within a certain radius, and this time the Courts, on the above grounds of avoiding inconvenience and litigation from uncertainty, adopted the straight line or crow-fly method of measurement (*Duignan v. Walker*, 1859, 28 L. J., Ch. 867; *Moufflet v. Cole*, 1872, L.R., 8 Ex. 32), and this is now the proper method in such cases (Jolly on "Restraint of Trade").

I distinguish these cases on three grounds: (i) All adopted the crow-fly method so as to avoid uncertainty and change of distance from the opening of new routes, and there would be no such uncertainty in our case, for once the drain is duly led to the sewer there is an end to the matter, unless the owner is foolish enough to bring himself under section 23 as to insufficient drains.

(ii) Nor would the nearest available route method (as opposed to the absolute straight line) lead in our case, as in the above cases, to extra surveyors' fees as witnesses in lawsuits; for in any case there must be a survey. Nor can I see how it would favour litigation.

(iii) Again, the above cases did not sacrifice justice, whereas in ours to forbid a man to build because, e.g., he cannot reach the sewer that lies just across a 99-foot river or above his house, would be most unjust, as we shall see.

These "crow-fly" cases are really in our favour, for inconvenience was considered. Hardship should be considered here. The Interpretation Act does not bear on the Public Health Act, for the former is not retrospective.

Moreover, there are positive instances in our favour. This crow-fly measurement is not adopted in the case of railway companies charging, as permitted and required, a penny per mile. If it were, fares from Hexham to Riccarton, or from Pickering to Whitby, would be cheaper.

Again, in *Balhard v. C. of S. London* (54 J. P., 135) distance was measured according to available route, for "nearest" was there held to mean nearest available, and a sewer, which was very near as the crow flies, and which could not be reached owing to intervening private alien land, was held not to be "near." (In the Metropolis Management Act, 1855, section 75, the sewer had to be "near," though this was not so in the P.H.A. 1848.) In *R. v. Saffron Walden* the Judge hints that, had his decision suggested trespass, the crow-fly method might not have been adopted.

Again, the spirit and intention of the section (note J, 4) favour the insertion of the words "by the nearest available route," and of "available" before "sewer." It allowed cesspools where the sewer was at a greater distance than 100 feet, so as to save us the expense of making a long drain.

Now if a man must get an easement of pipe-line from a

reluctant neighbour, or make a boring through a rock, or lay a pipe across the bed of a river 90 feet wide, simply because a sewer lies within 100 feet, where is the tenderness of the section for his pocket?

2. The argument from hardship.

We have to a certain degree considered "hardship," but we will now go further into the matter.

The hardship which would ensue from not considering the availability or otherwise of the sewer should force the Courts to consider it.

True, the Legislature would not be asking us to do the impossible, for nothing is easier than not to build at all, and even a by-law, which, unlike a statute, has to undergo the stringent test of reasonableness, can impose conditions to building which may in certain cases render building impossible. Thus in *Hendon L. B. v. Pounce* (61 L. T., 465, at 467 top left), a by-law which required new streets to be of a certain width was upheld, though owing to the narrowness of the building land the owner had no room for houses and streets as well, unless he cut off a piece of his neighbour's land. This is done every day with regard to building over yards. And see *Tunstall T. T. v. Loewes*, 20 J. P., 374. (*Simmonds v. Mulling*, 1897, 61 J. P., 502; 77 L. T., 341, is not in point, as it did not apply to new cesspools, and so did not prevent building.) (*Waite v. Garston*, 1867, L. R., 3 Q.B. 5, is against the view that an impossible condition can forbid building, but that case would not help us, for the by-law was *ultra vires* also.) The reason for the decisions in the *Hendon* and *Tunstall* cases is plain. The Legislature required wide streets, and cesspools well away from houses, and to allow a man to build a narrow alley or to place a cesspool near a house because he built without sufficient land, would be to sacrifice public health to private money-making, when the Act had plainly intended to restrict the latter in favour of the former.

For all this I think that, though we could not plead that we were being asked to do the impossible, we could plead hardship in being forbidden to build except on conditions which were not only impossible, but absurd, unfair, and unnecessary. Thus A, who has an available sewer 101 feet from his site, can use a cesspool, while B, who has a sewer 99 feet across a river or at the other side of his enemy's land, or on the other side of a valley or dip which he would have to bridge, or above his own ground floor, a sewer which is therefore either miles away or practically non-existent, must get to it somehow or leave his house unbuilt! Such an idea revolts against all common sense.

Again, these hardships would not be merely rare and sporadic, but would occur in thousands of cases over that vast area ruled by section 25, or sections similar in this respect in other Acts.

Thus the case meets the two conditions laid down by the Courts as to what hardships will move them to adopt a possible alternative construction so as to avoid hardship.

The Courts will construe a statute with this object (see cases under "Statute" in *Dig. of English Case Law*, and

see Max. 399, Chap. VIII. 264, &c., Section II. and 530-532, &c., and Chap. X., Section II., to 401b. *Contra*, 368, 369, 381-383a, 385, &c. No advantage is gained by examining these cases; they all lay down the same rather vague general rule, and apply it to cases differing from ours. Note also the cases above in which the crow-fly measurement was adopted in order to avoid inconvenience. *A.-G. v. Birmingham*, 4 K. & J. 528, 6 W.R., 811, rather favours private rights than otherwise.)

But there are two conditions. (1) Slight hardship (ours is not slight) will not be considered—*In re Hall* (21 Q.B.D., at 141 bottom), *In re Warkworth* (9 P.D. 20); *R. v. Overseers, Tonbridge* (13 Q.B.D., 342)—unless it is absurd too (as ours is). The Judges would stretch the statute in case of a great hardship. Small hardship: small stretch. Great hardship: great stretch.

Again (2), where public interest is against allowing exceptions (it is not against exceptions in our case, as we saw in A and B's case), hardships must also be common if the Judges are to consider them. *Williams v. Roberts*, 7 Exch. (W.H. & G.), 628; *Miller v. Solomons*, 21 L. J. Ex. 192, 193, 200; *Young v. Leamington*, 8 Ap. C., 527. (Ours would be common.)

One more argument. An attempt to get to an unavailable sewer might lead to great nuisance in many cases. Suppose, e.g., I did try to lay my drain under a river or down and up a valley in order to reach the sewer, I should have a most insanitary curve. The Act could not have intended this.

The surveyor might argue that an earlier and corresponding statute had expressly inserted words excusing connection with a sewer at a higher level (I allude to the 73rd section of the Metropolis Management Act of 1855), and that since our later section omits (note *j*, 1) this express excuse, it did so purposely and did not intend it to be pleaded. My answer is that the 73rd section did not correspond to ours, since it deals with old houses and the subsequent alternative method for "insufficient drains." The 75th, which does correspond to ours in that it deals with the penal method as to new houses, omits such an express excuse. Therefore the argument from contrast fails.

Then the surveyor might turn round and say that on the analogy of section 75 we have no excuse from the height of the sewer, since it is plain that under section 75 M.M.A. new houses were not to plead that excuse, but, on the contrary, were expressly forced to raise their levels. That is so in London but not elsewhere, for we are not bound by the London Act, which may be suited to London. Where the obstacle is intervening alien land, Londoners also are excused (see *Balhard's case*, *ante*). Further, it would be unjust, as section 73 of the London Act recognised, to make old houses drain into a sewer above their level, and if in our Act new houses must do so, then old houses must do so too, for section 23 of our Act, which deals with old houses, does not contain any express excuse in such cases.

So the argument from analogy fails.

